OCTOBER 1976

IF Galaxy Science Fiction

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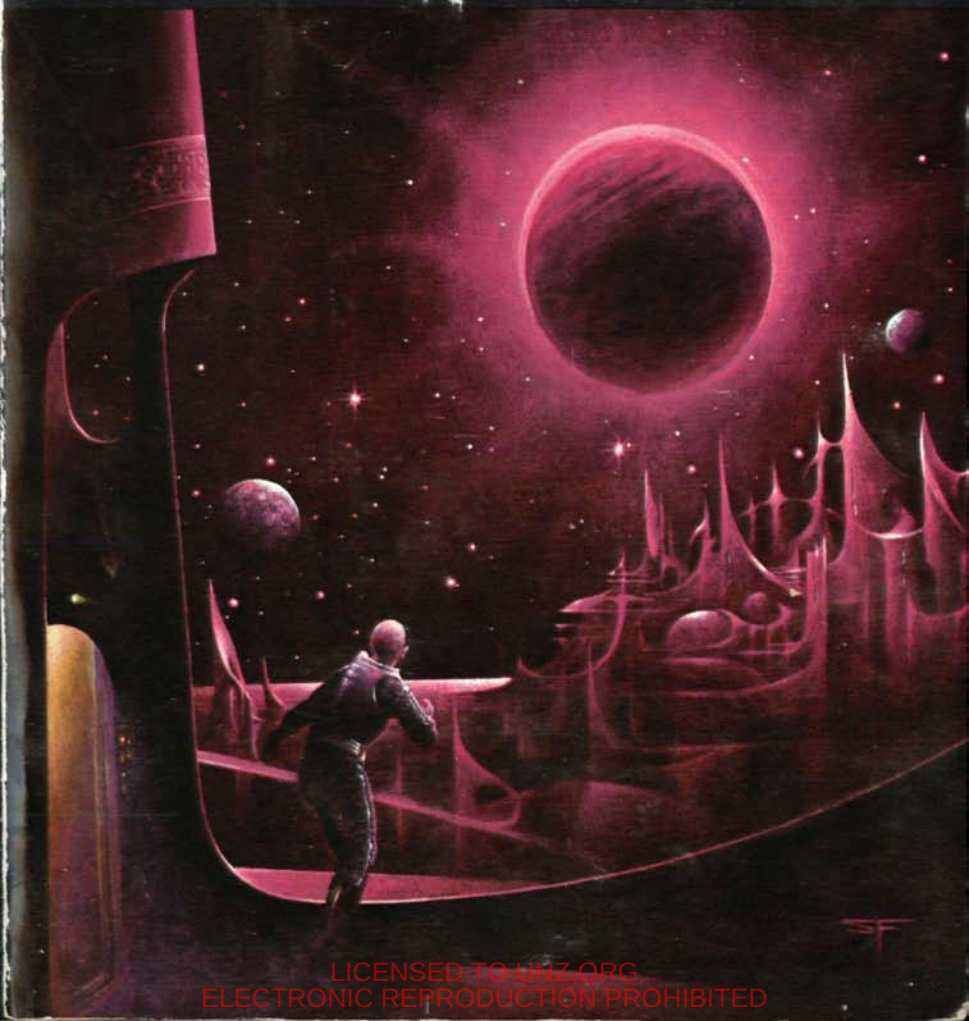
John Varley *BAGATELLE*

Larry Niven J. E. Pournelle Spider Robinson



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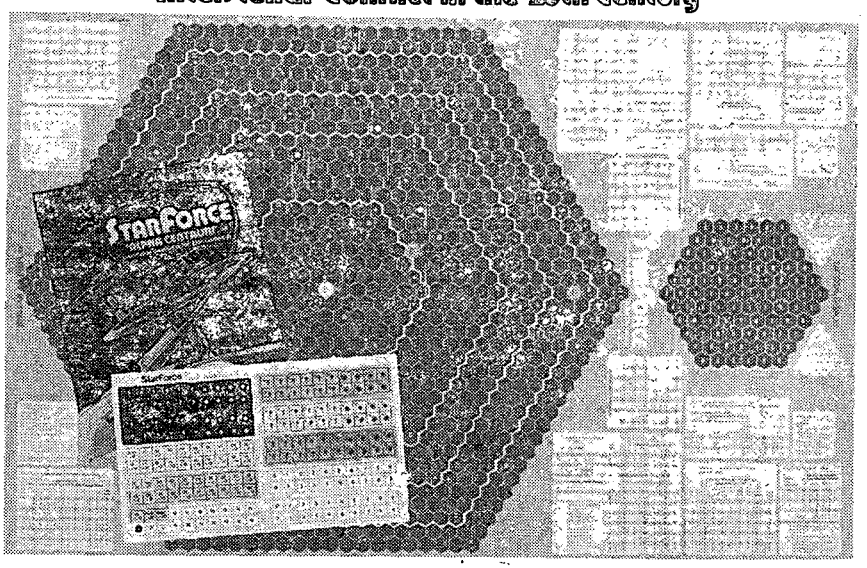

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Birkson had the single most important personality trait for a bomb expert—he was very disarming!

THERE WAS A BOMB on the Leystrasse, level forty-five, right outside the Bagatelle Flower and Gift Shoppe, about a hundred meters down the promenade from Prosperity Plaza.

"I am a bomb," the bomb said to passersby. "I will explode in four hours, five minutes, and seventeen seconds. I have a force equal to fifty thousand English tons of trinitrotoluene."

A small knot of people gathered to look at it.

"I will go off in four hours, four minutes, and thirty-seven seconds."

A few people became worried as the bomb talked on. They remembered business elsewhere and hurried away, often toward the tube trains to King City. Eventually, the trains became over-crowded and there was some pushing and shoving.

The bomb was a metal cylinder, a meter high, two meters long, mounted on four steerable wheels. There was an array of four television cameras mounted on top of the cylinder, slowly scanning through ninety degrees. No one could recall

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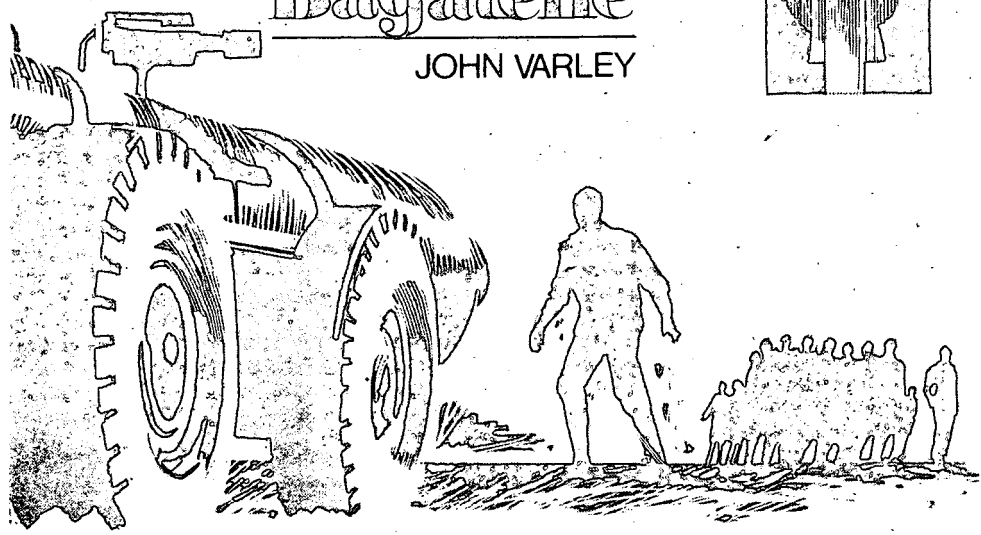
Bagatelle

JOHN VARLEY



how it came to be there. It looked a little like the municipal street-cleaning machines; perhaps no one had noticed it because of that.

"I am rated at fifty kilotons," the bomb said, with a trace of pride.

The police were called.

* * *

"A *nuclear* bomb, you say?" Municipal Police Chief Anna-Louise Bach felt sourness in the pit of her stomach and reached for a box of medicated candy. She was overdue for a new stomach, but the rate she went through them on her job coupled with the size of her paycheck had caused her to rely more and more on these stopgap measures. And the cost of cloned transplants was going up.

"It says fifty kilotons," said the man on the screen. "I don't see what else it could be. Unless it's just faking, of course. We're moving in radiation detectors."

"You said 'it says.' Are you speaking of a note, or phone call, or what?"

"No. It's talking to us. Seems friendly enough, too, but we haven't gotten around to asking it to disarm itself. It could be that its friendliness won't extend that far."

"No doubt." She ate another candy. "Call in the bomb squad, of

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course. Then tell them to do nothing until I arrive, other than look the situation over. I'm going to make a few calls, then I'll be there. No more than thirty minutes."

"All right. Will do."

There was nothing for it but to look for help. No nuclear bomb had ever been used on Luna. Bach had no experience with them, nor did her bomb crew. She brought her computer on line.

* * *

Roger Birkson liked his job. It wasn't so much the working conditions—which were appalling—but the fringe benefits. He was on call for thirty days, twenty-four hours a day, at a salary that was nearly astronomical. Then he got eleven months paid vacation. He was paid for the entire year whether or not he ever had to exercise his special talents during his thirty days duty. In that way, he was like a firefighter. In a way, he *was* a firefighter.

He spent his long vacations in Luna. No one had ever asked Birkson why he did so; had they asked, he would not have known. But the reason was a subconscious conviction that one day the entire planet Earth would blow up in one glorious fireball. He didn't want to be there when it happened.

Birkson's job was bomb disarming for the geopolitical administrative unit called CommEcon Europe. On a busy shift he might save the lives of twenty million CE Europeans.

Of the thirty-five Terran bomb experts vacationing on Luna at the time of the Leystrasse bomb scare, Birkson happened to be closest to the projected epicenter of the blast. The Central Computer found him twenty-five seconds after Chief Bach rang off from her initial report. He was lining up a putt on the seventeenth green of the Burning Tree underground golf course, a half kilometer from Prosperity Plaza, when his bag of clubs began to ring.

Birkson was wealthy. He employed a human caddy instead of the mechanical sort. The caddy dropped the flag he had been holding and went to answer it. Birkson took a few practice swings, but found that his concentration had been broken. He relaxed, and took the call.

"I need your advice," Bach said, without preamble. "I'm the Chief of Municipal Police for New Dresden, Anna-Louise Bach. I've had a report of a nuclear bomb on the Leystrasse, and I don't have anyone with your experience in these matters. Could you meet me at the tube station in ten minutes?"

"Are you crazy? I'm shooting for a seventy-five with two holes to go, an easy three-footer on seventeen and facing a par five on the last hole, and you expect me to go chasing after a hoax?"

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"Do you know it to be a hoax?" Bach asked, wishing he would say yes.

"Well, no, I just now heard about it, myself. But ninety percent of them are, you know."

"Fine. I suggest you continue your game. And since you're so sure, I'm going to have Burning Tree sealed off for the duration of the emergency. I want you right there."

Birkson considered this.

"About how far away is this 'Leystrasse'?"

"About six hundred meters. Five levels up from you, and one sector over. Don't worry. There must be dozens of steel plates between you and the hoax. You just sit tight, all right?"

Birkson said nothing.

"I'll be at the tube station in ten minutes," Bach said. "I'll be in a special capsule. It'll be the last one for five hours." She hung up.

Birkson contemplated the wall of the underground enclosure. Then he knelt on the green and lined up his putt. He addressed the ball, tapped it, and heard the satisfying rattle as it sank into the cup.

He looked longingly at the eighteenth tee, then jogged off to the clubhouse.

"I'll be right back," he called over his shoulder.

* * *

Bach's capsule was two minutes late, but she had to wait another minute for Birkson to show up. She fumed, trying not to glance at the timepiece embedded in her wrist.

He got in, still carrying his putter, and their heads were jerked back as the capsule was launched. They moved for only a short distance, then came to a halt. The door didn't open.

"The system's probably tied up," Bach said, squirming. She didn't like to see the municipal services fail in the company of this Terran.

"Ah," Birkson said, flashing a grin with an impossible number of square teeth. "A panic evacuation, no doubt. You didn't have the tube system closed down, I suppose?"

"No," she said. "I . . . well, I thought there might be a chance to get a large number of people away from the area in case this thing does go off."

He shook his head, and grinned again. He put this grin after every sentence he spoke, like punctuation.

"You'd better seal off the city. If it's a hoax, you're going to have hundreds of dead and injured from the panic. It's a lost cause trying to evacuate. At most, you might save a few thousand."

"But . . . "

"Keep them stationary. If it goes off, it's no use anyway. You'll lose the whole city. And no one's going to question your judgement because you'll be dead. If it doesn't go off, you'll be sitting pretty for having

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prevented a panic. Do it. I *know*."

Bach began to really dislike this man right then, but decided to follow his advice. And his thinking did have a certain cold logic. She phoned the station and had the lid clamped on the city. Now the cars in the cross-tube ahead would be cleared, leaving only her priority capsule moving.

They used the few minutes delay while the order was implemented to size each other up. Bach saw a blonde, square-jawed young man in a checkered sweater and golf knickers. He had a friendly face, and that was what puzzled her. There was no trace of worry on his smooth features. His hands were steady, clasped calmly around the steel shaft of his putter. She wouldn't have called his manner cocky or assured, but he did manage to look cheerful.

She had just realized that he was looking her over, and was wondering what he saw, when he put his hand on her knee. He might as well have slapped her. She was stunned.

"What are you . . . get your hand off me you . . . you groundhog."

Birkson's hand had been moving upward. He was apparently unfazed by the insult. He turned in his seat and reached for her hand. His smile was dazzling.

"I just thought that since we're stalled here with nothing else to do, we might start getting to know each other. No harm in that, is there? I just hate to waste any time, that's all."

She wrenched free of his grasp and assumed a defensive posture, feeling trapped in a nightmare. But he relented, having no interest in pursuing the matter when he had been rebuffed.

"All right. We'll wait. But I'd like to have a drink with you, or maybe dinner. After this thing's wrapped up, of course."

" 'This thing . . . ' How can you think of something like that . . . "

"At a time like this. I know. I've heard it. Bombs get me horny, is all. So okay, so I'll leave you alone." He grinned again. "But maybe you'll feel different when this is over."

For a moment she thought she was going to throw up from a combination of revulsion and fear. Fear of the bomb, not this awful man. Her stomach was twisted into a pretzel, and here he sat, thinking of sex. What was he, anyway?

The capsule lurched again, and they were on their way.

* * *

The deserted Leystrasse made a gleaming frame of stainless steel storefronts and fluorescent ceiling for the improbable pair hurrying from the tube station in the Plaza: Birkson in in his anachronistic golf togs, cleats rasping on the polished rock floor, and Bach, half a meter taller than him, thin like a Lunarian. She wore the regulation uni-

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form of the Municipal Police, which was a blue armband and cap with her rank of chief emblazoned on them, a shoulder holster, an equipment belt around her waist from which dangled the shining and lethal-looking tools of her trade, cloth slippers, and a few scraps of clothing in arbitrary places. In the benign environment of Lunar corridors, modesty had died out ages ago.

They reached the cordon which had been established around the bomb, and Bach conferred with the officer in charge. The hall was echoing with off-key music.

"What's that?" Birkson asked.

Officer Walters, the man to whom Bach had been speaking, looked Birkson over, weighing just how far he had to go in deference to this grinning weirdo. He was obviously the bomb expert Bach had referred to in an earlier call, but he was a Terran, and not a member of the force. Should he be addressed as 'sir'? He couldn't decide.

"It's the bomb. It's been singing to us for the last five minutes. Ran out of things to say, I guess."

"Interesting." Swinging the putter lazily from side to side, he walked to the barrier of painted steel crowd-control sections. He started sliding one of them to the side.

"Hold it . . . ah, sir," Walters said.

"Wait a minute, Birkson," Bach confirmed, running to the man and almost grabbing his sleeve. She backed away at the last moment.

"It said no one's to cross that barrier," Walters supplied to Bach's questioning glance. "Says it'll blow us all to the Farside."

"What is that damn thing, anyway?" Bach asked, plaintively.

Birkson withdrew from the barrier and took Bach aside with a tactful touch on the arm. He spoke to her with his voice just low enough for Walters to hear.

"It's a cyborged human connected to a bomb, probably a uranium device," he said. "I've seen the design. It's just like one that went off in Johannesburg three years ago. I didn't know they were still making them."

"I heard about it," Bach said, feeling cold and alone. "Then you think it's really a bomb? How do you know it's a cyborg? Couldn't it be tape recordings, or a computer?"

Birkson rolled his eyes slightly, and Bach reddened. Damn it, they were reasonable questions. And to her surprise, he could not defend his opinion logically. She wondered what she was stuck with. Was this man really the expert she took him to be, or a plaid-sweatered imposter?

"You can call it a hunch. I'm going to talk to this fellow, and I want you to roll up an industrial x-ray unit on the level below this while I'm doing it. On the level above, photographic film. You get the idea?"

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"You want to take a picture of the inside of this thing. Won't that be dangerous?"

"Yeah. Are your insurance premiums paid up?"

Bach said nothing, but gave the orders. A million questions were spinning through her head, but she didn't want to make a fool of herself by asking a stupid one. Such as: how much radiation did a big industrial x-ray machine produce when beamed through a rock and steel floor? She had a feeling she wouldn't like the answer. She sighed, and decided to let Birkson have his head until she felt he couldn't handle it. He was about the only hope she had.

And he was strolling casually around the perimeter, swinging his goddam putter behind him, whistling bad harmony with the tune coming from the bomb. What was a career police officer to do? Back him up on the harmonica?

The scanning cameras atop the bomb stopped their back and forth motion. One of them began to track Birkson. He grinned his flashiest, and waved to it. The music stopped.

"I am a fifty kiloton nuclear bomb of the uranium-235 type," it said. "You must stay behind the perimeter I have caused to be erected here. You must not disobey this order."

Birkson held up his hands, still grinning, and splayed out his fingers.

"You got me, bud. I won't bother you. I was just admiring your casing. Pretty nice job, there. It seems a shame to blow it up."

"Thank you," the bomb said, cordially. "But that is my purpose. You cannot divert me from it."

"Never entered my mind. Promise."

"Very well. You may continue to admire me, if you wish, but from a safe distance. Do not attempt to rush me. All my vital wiring is safely protected, and I have a response time of three milliseconds. I can ignite long before you can reach me, but I do not wish to do so until the alloted time has come."

Birkson whistled. "That's pretty fast, brother. Much faster than me, I'm sure. It must be nice, being able to move like that after blundering along all your life with neural speeds."

"Yes, I find it very gratifying. It was a quite unexpected benefit of becoming a bomb."

This was more like it, Bach thought. Her dislike of Birkson had not blinded her to the fact that he had been checking out his hunch. And her questions had been answered: no tape array could answer questions like that, and the machine had as much as admitted that it had been a human being at one time.

Birkson completed a circuit, back to where Bach and Walters were standing. He paused, and said in a low voice, "Check out that time."

"What time?"

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"What time did you say you were going to explode?" he yelled.

"In three hours, twenty-one minutes, and eighteen seconds," the bomb supplied.

"That time," he whispered. "Get your computers to work on it. See if it's the anniversary of any political group, or the time something happened that someone might have a grudge about." He started to turn away, then thought of something. "But most important, check the birth records."

"May I ask why?"

He seemed to be dreaming, but came back to them. "I'm just feeling this character out. I've got a feeling this might be his birthday. Find out who was born at that time—it can't be too many, down to the second—and try to locate them all. The one you can't find will be our guy. I'm betting on it."

"What are you betting? And how do you know for sure it's a man?"

That look again, and again she blushed. But, damn it, she had to ask questions. Why should he make her feel defensive about it?'

"Because he's chosen a male voice to put over his speakers. I know that's not conclusive, but you get hunches after a while. As to what I'm betting . . . no, it's not my life. I'm sure I can get this one. How about dinner tonight if I'm right?" The smile was ingenuous, without the trace of lechery she thought she had seen before. But her stomach was still crawling. She turned away without answering.

For the next twenty minutes, nothing much happened. Birkson continued his slow stroll around the machine, stopping from time to time to shake his head in admiration. The thirty men and women of Chief Bach's police detail stood around nervously with nothing to do, as far away from the machine as pride would allow. There was no sense in taking cover.

Bach herself was kept busy coordinating the behind-the-scenes maneuvering from a command post that had been set up around the corner, in the Elysian Travel Agency. It had phones and a computer output printer. She sensed the dropping morale among her officers, who could see nothing going on. Had they known that surveying lasers were poking their noses around trees in the Plaza, taking bearings to within a thousandth of a millimeter, they might have felt a little better. And on the floor below, the x-ray had arrived.

Ten minutes later, the output began to chatter. Bach could hear it in the silent, echoing corridor from her position halfway between the travel agency and the bomb. She turned, and met a young officer with the green armband of a rookie. The woman's hand was ice-cold as she handed Bach the sheet of yellow printout paper. There were three names printed on it, and below that, some dates and events listed.

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"This bottom information was from the fourth expansion of the problem," the officer explained. "Very low probability stuff. The three people were all born either on the second or within a three-second margin of error, in three different years. Everyone else had been contacted."

"Keep looking for these three, too," Bach said. As she turned away, she noticed that the young officer was pregnant, about in her fifth month. She thought briefly of sending her away from the scene, but what was the use?

Birkson saw her coming, and broke off his slow circuits of the bomb. He took the paper from her and scanned it. He tore off the bottom part without being told it was low probability, crumpled it, and let it drop to the floor. Scratching his head, he walked slowly back to the bomb.

"Hans?" he called out.

"How did you know my name?" the bomb asked.

"Ah, Hans, my boy, credit us with some sense. You can't have got into this without knowing that the MuniPol can do very fast investigations. Unless I've been underestimating you. Have I?"

"No," the bomb conceded. "I knew you would find out who I was. But it doesn't alter the situation."

"Of course not. But it makes for easier conversation. How has life been treating you, my friend?"

"Terrible," mourned the man who had become a fifty kiloton nuclear weapon.

* * *

Every morning Hans Leiter rolled out of bed and padded into his cozy water closet. It was not the standard model for residential apartment modules, but a special one he had installed after he moved in. Hans lived alone, and it was the one luxury he allowed himself. In his little palace, he sat in a chair that massaged him into wakefulness, washed him, shaved him, powdered him, cleaned his nails, splashed him with scent, then made love to him with a rubber imitation that was a good facsimile of the real thing. Hans was awkward with women.

He would dress, walk down three hundred meters of corridor, and surrender himself to a pedestrian slideway which took him as far as the Cross-Crisium Tube. There, he allowed himself to be fired like a projectile through a tunnel below the Lunar surface.

Hans worked in the Crisium Heavy Machine Foundary. His job there was repairing almost anything that broke down. He was good at it; he was much more comfortable with machines than with people.

One day he made a slip and got his leg caught in a massive roller. It was not a serious accident, because the failsafe systems turned off the machine before his body or head

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could be damaged, but it hurt terribly and completely ruined the leg. It had to be taken off. While he was waiting for the cloned replacement limb to be grown, Hans had been fitted with a prosthetic.

It has been a revelation to him. It worked like a dream, as good as his old leg and perhaps better. It was connected to his severed leg nerve, but was equipped with a threshold cut-off circuit, and one day when he barked his artificial shin he saw that it had caused him no pain. He recalled the way that same injury had felt with his flesh and blood leg, and again he was impressed. He thought, too, of the agony when his leg had been caught in the machine.

When the new leg was ready for transplanting, Hans had elected to retain the prosthetic. It was unusual, but not unprecedented.

From that time on, Hans, who had never been known to his coworkers as talkative or social, withdrew even more from his fellow humans. He would speak only when spoken to. But people had observed him talking to the stamping press, and the water cooler, and the robot sweeper.

At night, it was Hans' habit to sit on his vibrating bed and watch the holovision until one o'clock. At that time, his kitchen would prepare him a late snack, roll it to him in his bed, and he would retire for the night.

For the last three years Hans had been neglecting to turn the set on before getting into bed. Nevertheless, he continued to sit quietly on the bed staring at the empty screen.

* * *

When she finished reading the personal data printout, Bach was struck once more at the efficiency of the machines in her control. This man was almost a cipher, yet there were nine thousand words in storage concerning his uneventful life, ready to be called up and printed into an excruciatingly boring biography.

"... so you came to feel that you were being controlled at every step of your life by machines," Birkson was saying. He was sitting on one of the barriers, swinging his legs back and forth. Bach joined him and offered the long sheet of printout. He waved it away. She could hardly blame him.

"But it's true!" the bomb said. "We all are, you know. We're part of this huge machine that's called New Dresden. It moves us around like parts on an assembly line, washes us, feeds us, puts us to bed and sings us to sleep."

"Ah," Birkson said, agreeably. "Are you a Luddite, Hans?"

"No!" the bomb said in a shocked voice. "Roger, you've missed the whole point. I don't want to destroy the machines. I want to serve them better. I wanted to become a machine, like my new leg. Don't you see? We're part of

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the machine, but we're the most inefficient part.''

The two talked on, and Bach wiped the sweat from her palms. She couldn't see where all this was going, unless Birkson seriously hoped to talk Hans Leiter out of what he was going to do in—she glanced at the clock—two hours and forty-three minutes. It was maddening. On the one hand, she recognized the skill he was using in establishing a rapport with the cyborg. They were on a first-name basis, and at least the damn machine cared enough to argue its position. On the other hand, so what? What good was it doing?

Walters approached and whispered into her ear. She nodded, and tapped Birkson on the shoulder.

''They're ready to take the picture whenever you are,'' she said.

He waved her off.

''Don't bother me,'' he said, loudly. ''This is getting interesting. So if what you say is true,'' he went on to Hans, getting up and pacing intently back and forth, this time inside the line of barriers, ''maybe I ought to look into this myself. You really like being cyborged better than being human?''

''Infinitely so,'' the bomb said. He sounded enthusiastic. ''I need no sleep now, and I no longer have to bother with elimination or eating. I have a tank for nutrients, which are fed into the housing where my brain and central nervous system are located.'' He paused. ''I tried to eliminate the ups and downs of hormone flow and the emotional reactions that followed,'' he confided.

''No dice, huh?''

''No. Something always distracted me. So when I heard of this place where they would cyborg me and get rid of all that, I jumped at the chance.''

Inactivity was making Bach impulsive. She *had* to say or do something.

''Where did you get the work done, Hans?'' she ventured.

The bomb started to say something, but Birkson laughed loudly and slapped Bach hard on the back. ''Oh, no, Chief. That's pretty tricky, right Hans? She's trying to get you to rat. That's not done, Chief. There's no point of honor involved.''

''Who is that?'' the bomb asked, suspiciously.

''Let me introduce Chief Anna-Louise Bach, of the New Dresden Police. Ann, meet Hans.''

''Police?'' Hans asked, and Bach felt goose-pimples when she detected a note of fright in the voice. What was this maniac trying to do, frightening the guy like that? She was close to pulling Birkson off the case. She held off because she thought she could see a familiar pattern in it, something she could use as a way to participate, even if ignominiously. It was the old good guy-bad guy routine, one of the

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oldest police maneuvers in the book.

"Aw, don't be like that," Birkson said to Hans. "Not all cops are brutes. Ann here, she's a nice person. Give her a chance. She's only doing her job."

"Oh, I have no objection to police," the bomb said. "They are necessary to keep the social machine functioning. Law and order is a basic precept of the coming new Mechanical Society. I'm pleased to meet you, Chief Bach. I wish the circumstances didn't make us enemies."

"Pleased to meet you, Hans." She thought, carefully before she phrased her next question. She wouldn't have to take the hard-line approach to contrast herself with affable, buddy-buddy Birkson. She needn't be an antagonist, but it wouldn't hurt if she asked questions that probed at his motives.

"Tell me, Hans. You say you're not a Luddite. You say you like machines. Do you know how many machines you'll destroy if you set yourself off? And even more important, what you'll do to this social machine you've been talking about? You'll wipe out the whole city."

The bomb seemed to be groping for words. He hesitated, and Bach felt the first glimmer of hope since this insanity began.

"You don't understand. You're speaking from an organic viewpoint. Life is important to you. A machine is not concerned with life. Damage to a machine, even the social machine, is simply something to be repaired. In a way, I hope to set an example. I wanted to become a machine—"

"And the best, the very ultimate machine," Birkson put in, "is the atomic bomb. It's the end point of all mechanical thinking."

"Exactly," said the bomb, sounding very pleased. It was nice to be understood. "I wanted to be the very best machine I could possibly be, and it had to be this."

"Beautiful, Hans," Birkson breathed. "I see what you're talking about. So if we go on with that line of thought we logically come to the conclusion . . ." and he was off into an exploration of the fine points of the new Mechanistic world view.

Bach was trying to decide which was the crazier of the two, when she was handed another message. She read it, then tried to find a place to break into the conversation. But there was no convenient place. Birkson was more and more animated, almost frothing at the mouth as he discovered points of ageement between the two of them. Bach noticed her officers standing around nervously, following the conversation. It was clear from their expressions that they feared they were being sold out, that when zero hour arrived they would still be here watching intellectual ping-pong. But long before that, she could have a mutiny on her hands. Several of

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them were fingering their weapons, probably without even knowing it.

She touched Birkson on the sleeve, but he waved her away. Damn it, this was too much. She grabbed him and nearly pulled him from his feet, swung him around until her mouth was close to his ear and growled.

"Listen to me, you idiot. They're going to take the picture. You'll have to stand back some. It's better if we're all shielded."

"Leave me *alone*," he shot back, and pulled from her grasp. But he was still smiling. "This is just getting interesting," he said, in a normal tone of voice.

Birkson came near to dying in that moment. Three guns were trained on him from the circle of officers, awaiting only the order to fire. They didn't like seeing their Chief treated that way.

Bach herself was damn near to giving the order. The only thing that stayed her hand was the knowledge that with Birkson dead, the machine might go off ahead of schedule. The only thing to do now was to get him out of the way and go on as best she could, knowing that she was doomed to failure. No one could say she hadn't given the expert a chance.

"But what I was wondering about," Birkson was saying, "was why today? What happened today? Is this the day Cyrus McCormick invented the combine harvester, or something?"

"It's my birthday," Hans said, somewhat shyly.

"Your *birthday*?" Birkson managed to look totally amazed to learn what he already knew. "Your birthday. That's *great*, Hans. Many happy returns of the day, my friend." He turned and took in all of the officers with an expansive sweep of his hands. "Let's sing, people. Come on, it's his birthday, for heaven's sake. *Happy birthday to you, happy birthday to you, happy birthday dear Hans . . .* "

He bellowed, he was off-key, he swept his hands in grand circles with no sense of rhythm. But so infectious was his mania that several of the officers found themselves joining in. He ran around the circle, pulling the words out of them with great scooping motions of his hands.

Bach bit down hard on the inside of her cheek to keep herself steady. *She had been singing, too*. The scene was so ridiculous, so blackly improbable . . .

She was not the only one who was struck the same way. One of her officers, a brave man who she knew personally to have shown courage under fire, fell on his face in a dead faint. A woman officer covered her face with her hands and fled down the corridor, making helpless coughing sounds. She found an alcove and vomited.

And still Birkson capered. Bach had her gun half-way out of the shoulder holster, when he shouted.

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"What's a birthday without a party?" he asked. "Let's have a big party." He looked around, fixed on the flower shop. He started for it, and as he passed Bach he whispered, "Take the picture *now*."

It galvanized her. She desperately wanted to believe he knew what he was doing, and just at the moment when his madness seemed total he had shown her the method. *A distraction.* Please, let it be a distraction. She turned and gave the prearranged signal to the officer standing at the edge of Prosperity Plaza.

She turned back in time to see Birkson smash in the window of the flower shop with his putter. It made a deafening crash.

"Goodness," said Hans, who sounded truly shocked. "Did you have to do that? That's private property."

"What does it matter?" Birkson yelled. "Hell, man, you're going to do much worse real soon. I'm just getting things started." He reached in and pulled out an armload of flowers, signalling to others to give him a hand. The police didn't like it, but soon were looting the shop and building a huge wreath just outside the line of barriers.

"I guess you're right," said Hans, a little breathlessly. A taste of violence had excited him, whetted his appetite for more to come. "But you startled me. I felt a real thrill, like I haven't felt since I was human."

"Then let's do it some more." And Birkson ran up and down one side of the street, breaking out every window he could reach. He picked up small articles he found inside the shops and threw them. Some of them shattered when they hit.

He finally stopped. Leystrasse had been transformed. No longer the scrubbed and air-conditioned Lunar environment, it had become as shattered, chaotic and uncertain as the tension-filled emotional atmosphere it contained. Bach shuddered and swallowed the rising taste of bile. It was a precursor of things to come, she was sure. It hit her deeply to see the staid and respectable Leystrasse ravaged.

"A cake," Birkson said. "We have to have a cake. Hold on a minute, I'll be right back." He strode quickly toward Bach, took her elbow and turned her, pulled her insistently away with him.

"You have to get those officers away from here," he said, conversationally. "They're tense. They could explode at any minute. In fact," and he favored her with his imbecile grin, "they're probably more dangerous right now than the bomb."

"You mean you think it's a fake?"

"No. It's for real. I know the psychological pattern. After this much trouble, he won't want to be a dud. Other types, they're in it for the attention and they'd just as soon fake it. Not Hans. But what I mean

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is, I have him. I can get him. But I can't count on your officers. Pull them back and leave only two or three of your most trusted people."

"All right." She had decided again, more from a sense of helpless futility than anything else, to trust him. He *had* pulled a neat diversion with the flower shop and the x-ray.

"We may have him already," he went on, as they reached the end of the street and turned the corner. "Often, the x-ray is enough. It cooks some of the circuitry and makes it unreliable. I'd hope to kill him outright, but he's shielded. Oh, he's probably got a lethal dosage, but it'd take him days to die. That doesn't do us any good. And if his circuitry *is* knocked out, the only way to find out is to wait. We have to do better than that. Here's what I want you to do."

He stopped abruptly and relaxed, leaning against the wall and gazing out over the trees and artificial sunlight of the Plaza. Bach could hear songbirds. They had always made her feel good before. Now all she could think of was incinerated corpses. Birkson ticked off points on his fingers.

She listened to him carefully. Some of it was strange, but no worse than she had already witnessed. And he really did have a plan. He really did. The sense of relief was so tremendous that it threatened to create a mood of euphoria in her, one not yet justified by the circumstances. She nodded curtly to each of his suggestions, then again to the officer who stood beside her, confirming what Birkson had said and turning it into orders. The young man rushed off to carry them out and Birkson started to return to the bomb. Bach grabbed him.

"Why wouldn't you let Hans answer my question about who did the surgical work on him? Was that part of your plan?" The question was half belligerant.

"Oh. Yeah, it was, in a way. I just grabbed the opportunity to make him feel closer to me. But it wouldn't have done you any good. He'll have a block against telling that, for sure. It could even be set to explode the bomb if he tries to answer that question. Hans is a maniac, but don't underestimate the people who helped him get where he is now. They'll be protected."

"Who are they?"

Birkson shrugged. It was such a casual, uncaring gesture that Bach was annoyed again.

"I have no idea. I'm not political, Ann. I don't know the Anti-abortion Movement from the Freedom for Mauretania League. They build 'em, I take 'em apart. It's as simple as that. *Your* job is to find out how it happened. I guess you ought to get started on that."

"We already have," she conceded. "I just thought that . . . well, coming from Earth, where this sort of thing happens all the time, that you might know . . .

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damn it, Birkson. *Why*? Why is this happening?"

He laughed, while Bach turned red and went into a slow boil. Any of her officers, seeing her expression, would have headed for the nearest blast shelter. But Birkson laughed on. Didn't he give a damn about anything?

"Sorry," he forced out. "I've heard that question before, from other police chiefs. It's a good question." He waited, a half-smile on his face. When she didn't say anything, he went on.

"You don't have the right perspective on this, Ann."

"That's Chief Bach to you, damn you."

"Okay," he said, easily. "What you don't see is that this thing is no different from a hand grenade tossed into a crowd, or a bomb sent through the mail. It's a form of communication. It's just that today, with so many people, you have to shout a little louder to get any attention."

"But . . . who? They haven't even identified themselves. You're saying that Hans is a tool of these people. He's been wired into the bomb, with his own motives for exploding. Obviously he didn't have the resources to do this himself, I can see that."

"Oh, you'll hear from them. I don't think they expect him to be successful. He's a warning. If they were *really* serious they could find the sort of person they want, one who's politically committed and will die for the cause. Of course, they don't *care* if the bomb goes off; they'll be pleasantly surprised if it does. Then they can stand up and pound their chests for a while. They'll be famous."

"But where did they get the uranium? The security is . . . "

For the first time, Birkson showed a trace of annoyance.

"Don't be silly. The path leading to today was irrevocably set in 1945. There was never any way to avoid it. The presence of a tool implies that it will be used. You can try your best to keep it in the hands of what you think of as responsible people, but it'll never work. And it's *no different*, that's what I'm saying. This bomb is just another weapon. It's a cherry bomb in an anthill. It's gonna cause one hill of ants a hell of a lot of trouble, but it's no threat to the race of ants."

Bach could not see it that way. She tried, but it was still a nightmare of entirely new proportions to her. How could he equate the killing of millions of people with a random act of violence where three or four might be hurt? She was familiar with that. Bombs went off every day in her city, as in every human city. People were always dissatisfied.

"I could walk down . . . no, it's up here, isn't it?" Birkson mused for a moment on cultural differences. "Anyway, give me enough money and I'll bet I could go up to

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your slum neighborhoods right this minute and buy you as many kilos of uranium or plutonium as you want. Which is something you ought to be doing, by the way. Anything can be bought. *Anything*. For the right price, you could have bought weapons-grade material on the black market as early as 1960 or so. It would have been very expensive; there wasn't much of it. You'd have had to buy a *lot* of people. But now . . . well, you think it out." He stopped, and seemed embarrassed by his outburst.

"I've read a little about this," he apologized.

She did think it out as she followed him back to the cordon. What he said was true. When controlled fusion proved too costly for wide-scale use, humanity had opted for fast breeder reactors. There had been no other choice. And from that moment, nuclear bombs in the hands of terrorists had been the price humanity accepted. And the price they would continue to pay.

"I wanted to ask you one more question," she said. He stopped and turned to face her. His smile was dazzling.

"Ask away. But are you going to take me up on that bet?"

She was momentarily unsure of what he meant.

"Oh. Are you saying you'd help us locate the underground uranium ring? I'd be grateful . . . ."

"No, no. Oh, I'll help you. I'm sure I can make a contact. I used to do that before I got into this game. What I meant was, are you going to bet I can't find some? We could bet . . . say, a dinner together as soon as I've found it. Time limit of seven days. How about it?"

She thought she had only two alternatives: walk away from him, or kill him. But she found a third.

"You're a betting man. I guess I can see why. But that's what I wanted to ask you. How can you stay so calm? Why doesn't this get to you like it does to me and my people? You can't tell me it's simply that you're used to it."

He thought about it. "And why not? You can get used to anything, you know. Now what about that bet?"

"If you don't stop talking about that," she said, quietly, "I'm going to break your arm."

"All right." He said nothing further, and she asked no further questions.

* * *

The fireball grew in milliseconds into an inferno that could scarcely be described in terms comprehensible to humans. Everything in a half-kilometer radius simply vanished into super-heated gases and plasma: buttresses, plate-glass windows, floors and ceilings, pipes, wires, tanks, machines, gewgaws and trinkets by the million, books, tapes, apartments, furniture, household pets, men, women, and chil-

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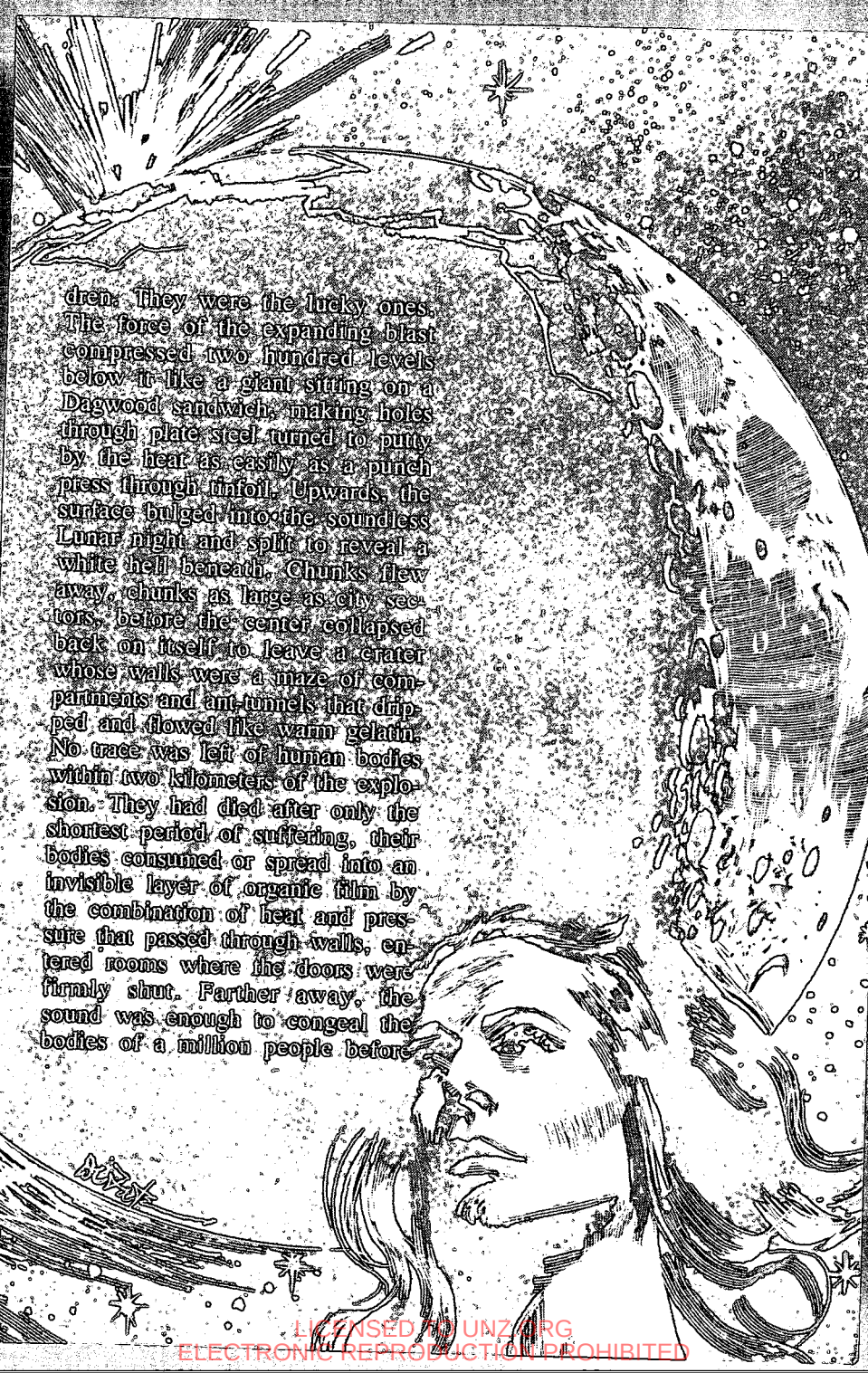

dren. They were the lucky ones. The force of the expanding blast compressed two hundred levels below it like a giant sitting on a Dagwood sandwich, making holes through plate steel turned to putty by the heat as easily as a punch press through tinfoil. Upwards, the surface bulged into the soundless Lunar night and split to reveal a white hell beneath. Chunks flew away, chunks as large as city sectors, before the center collapsed back on itself to leave a crater whose walls were a maze of compartments and ant-tunnels that dripped and flowed like warm gelatin. No trace was left of human bodies within two kilometers of the explosion. They had died after only the shortest period of suffering, their bodies consumed or spread into an invisible layer of organic film by the combination of heat and pressure that passed through walls, entered rooms where the doors were firmly shut. Farther away, the sound was enough to congeal the bodies of a million people before

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the heat roasted them, the blast stripped flesh from bones to leave shrunken stick figures. Still the effects attenuated as the blast was channeled into corridors that were structurally strong enough to remain intact, and that very strength was the downfall of the inhabitants of the maze. Twenty kilometers from the epicenter, pressure doors popped through steel flanges like squeezed watermelon seeds.

What was left was five million burnt, blasted corpses, and ten million injured so hideously that they would die in hours or days. But Bach had been miraculously thrown clear by some freak of the explosion. She hurtled through the void with fifteen million ghosts following her, and each carried a birthday cake. They were singing. She joined in.

"Happy birthday to you, happy birthday . . ."

"Chief Bach."

"Huh?" She felt a cold chill pass over her body. For a moment she could only stare down into the face of Roger Birkson.

"You all right now?" he asked. He looked concerned.

"I'm . . . what happened?"

He patted her on both arms, then shook her heartily.

"Nothing. You drifted off for a moment." He narrowed his eyes. "I think you were daydreaming. I want to be diplomatic about this . . . ah, what I mean . . . I've seen it happen before. I think you were trying to get away from us."

She rubbed her hands over her face.

"I think I was. But I sure went in the wrong direction. I'm all right now." She could remember it now, and knew she had not passed out or become totally detached from what was going on. She had watched it all. Her memories of the explosion, so raw and real a moment before, were already the stuff of nightmares.

Too bad she hadn't come awake into a better world. It was so damn unfair. That was the reward at the end of a nightmare, wasn't it? You woke up to find everything was all right.

Instead, here was a long line of uniformed officers, bearing birthday cakes to a fifty kiloton atomic bomb.

* * *

Birkson had ordered the lights turned off in the Leystrasse. When his order had not been carried out, he broke out the lights with his putter. Soon, he had some of the officers helping him.

Now the beautiful Leystrasse, the pride of New Dresden, was a flickering tunnel through hell. The light of a thousand tiny birthday candles on five hundred cakes turned everything red-orange and made people into shadowed demons. Officers kept arriving with hastily wrapped presents, flowers, balloons. Hans, the little man who was now nothing

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but a brain and nerve network floating in a lead container; Hans, the cause of all this, the birthday boy himself, watched it all in unconcealed delight from his battery of roving television cameras. He sang loudly.

"I am a bomb! I am a bomb!" he yelled. He had never had so much fun.

Bach and Birkson retreated from the scene into the darkened recess of the Bagatelle Flower Shoppe. There, a stereo viewing tank had been set up.

The x-ray picture had been taken with a moving plate technique that allowed a computer to generate a three dimensional model. They leaned over the tank now and studied it. They had been joined by Sergeant McCoy, Bach's resident bomb expert, and another man from the Lunar Radiation Laboratory.

"This is Hans," said Birkson, moving a red dot in the tank by means of a dial on the side. It flicked over and around a vague gray shape that trailed dozens of wires. Bach wondered again at the pressures that would allow a man to like having his body stripped from him. There was nothing in that lead flask but the core of the man, the brain and central nervous system.

"Here's the body of the bomb. The two sub-critical masses. The H.E. charge, the timer, the arming barrier, which is now withdrawn. It's an old design, ladies and gentlemen. Old, but reliable. As basic as the bow and arrow. It's very much like the first one dropped on the Nippon Empire at Hiro-Shima."

"You're sure it'll go off, then?" Bach put in.

"Sure as taxes. Hell, a kid could build one of these in the bathroom, given only the uranium and some shielding equipment. Now let me see." He pored over the phantom in the tank, tracing out wiring paths with the experts. They debated possibilities, lines of attack, drawbacks. At last they seemed to reach a consensus.

"As I see it, we have only one option," Birkson said. "We have to go for his volitional control over the bomb. I'm pretty sure we've isolated the main cable that goes from him to the detonator. Knock that out, and he can't do a thing. We can pry that tin can open by conventional means and disarm that way. McCoy?"

"I agree," said McCoy. "We'd have a full hour, and I'm sure we can get in there with no trouble. When they cyborged this one, they put all their cards on the human operator. They didn't bother with entry blocks, since Hans could presumably blow it up before we could get close enough to do anything. With his control out, we only have to open it up with a torch and drop the damper into place.

The LRL man nodded his agreement. "Though I'm not quite as convinced as Mr. Birkson that he's got the right cable in mind for what

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he wants to do. If we had more time . . . ''

''We've wasted enough time already,'' Bach said, decisively. She had swung rapidly from near terror of Roger Birkson to total trust. It was her only defense. She knew she could do nothing at all about the bomb, and had to trust someone.

''Then we go for it. Is your crew in place? Do they know what to do? And above all, are they *good*? Really good. There won't be a second chance.''

''Yes, yes, and yes,'' Bach said. ''They'll do it. We know how to cut rock on Luna.''

''Then give them the coordinates, and go.'' Birkson seemed to relax a bit. Bach saw that he had been under some form of tension, even if it was only excitement at the challenge. He had just given his last order. It was no longer in his hands. His fatalistic gambler's instinct came into play and the restless, churning energy he had brought to the enterprise vanished. There was nothing to do about it but wait. Birkson was good at waiting. He had lived through twenty-one of these final countdowns.

He faced Bach and started to say something to her, then thought better of it. She saw doubt in his face for the first time, and it made her skin crawl. Damn it, she had thought he was *sure*.

''Chief,'' he said, quietly, ''I want to apologize for the way I treated you these last few hours. It's not something I can control when I'm on the job. I . . . ''

This time it was Bach's turn to laugh, and the release of tension it brought with it was almost orgasmic. She felt like she hadn't laughed for a million years.

''Forgive me,'' she said. ''I saw you were worried, and thought it was about the bomb. It was just such a relief.''

''Oh, yeah,'' he said, dismissing it. ''No point in worrying now. Either your people hit it or they don't. We won't know if they don't. What I was saying, it just sort of comes over me. Honestly. I get horny, I get manic, I totally forget about other people except as objects to be manipulated. So I just wanted to say I like you. I'm glad you put up with me. And I won't pester you anymore.''

She came over and put her hand on his shoulder.

''Can I call you Roger? Thanks. Listen, if this thing works, I'll have dinner with you. I'll give you the key to the city, a ticker tape parade, and a huge bonus for a consultant fee . . . and my eternal friendship. We've been tense, okay? Let's forget about these last few hours.''

''All right.'' His smile was quite different this time.

Outside, it happened very quickly. The crew on the laser drill were positioned beneath the bomb, working from ranging reports and calculations to aim their brute at precisely the right spot.

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The beam took less than a tenth of a second to eat through the layer of rock in the ceiling and emerge in the air above the Leystrasse. It ate through the metal sheath of the bomb's underside, the critical wire, the other side of the bomb, and part of the ceiling like they weren't even there. It had penetrated into the level above before it could be shut off.

There was a shower of sparks, a quick sliding sound, then a muffled thud. The whole structure of the bomb trembled, and smoke screeched from the two drilled holes in the top and bottom. Bach didn't understand it, but could see that she was alive and assumed it was over. She turned to Birkson, and the shock of seeing him nearly stopped her heart.

His face was a gray mask, drained of blood. His mouth hung open. He swayed, and almost fell over. Bach caught him and eased him to the floor.

"Roger . . . what is it? Is it still . . . .will it go off? Answer me, *answer me*. What should I do?"

He waved weakly, pawed at her hands. She realized he was trying to give her a reassuring pat. It was feeble indeed.

"No danger," he wheezed, trying to get his breath back. "No danger. The wrong wire. We hit the wrong wire. Just luck, is all, nothing but luck."

She remembered. They had been trying to remove Hans' control over the bomb. Was he still in control? Birkson answered before she could speak.

"He's dead. That explosion. That was the detonator going off. He reacted just too late. We hit the disarming switch. The shield dropped into place so the masses couldn't come together even if the bomb was set off. Which he did. He set it off. That sound, that *mmmmmmwoooooph!*" He was not with her. His eyes stared back into a time and place that held horror for him.

"I heard that sound—the detonator—once before, over the telephone. I was coaching this woman, no more than twenty-five, because I couldn't get there in time. She had only three more minutes. I heard that sound, then nothing, nothing."

She sat near him on the floor as her crew began to sort out the mess, haul the bomb away for disposal, laugh and joke in hysterical relief. At last Birkson regained control of himself. There was no trace of the bomb except a distant hollowness in his eyes.

"Come on," he said, getting to his feet with a little help from her. "You're going on twenty-four hour leave. You've earned it. We're going back to Burning Tree and you're going to watch me make a par five on the eighteenth. Then we've got a date for dinner. What place is nice?" ★

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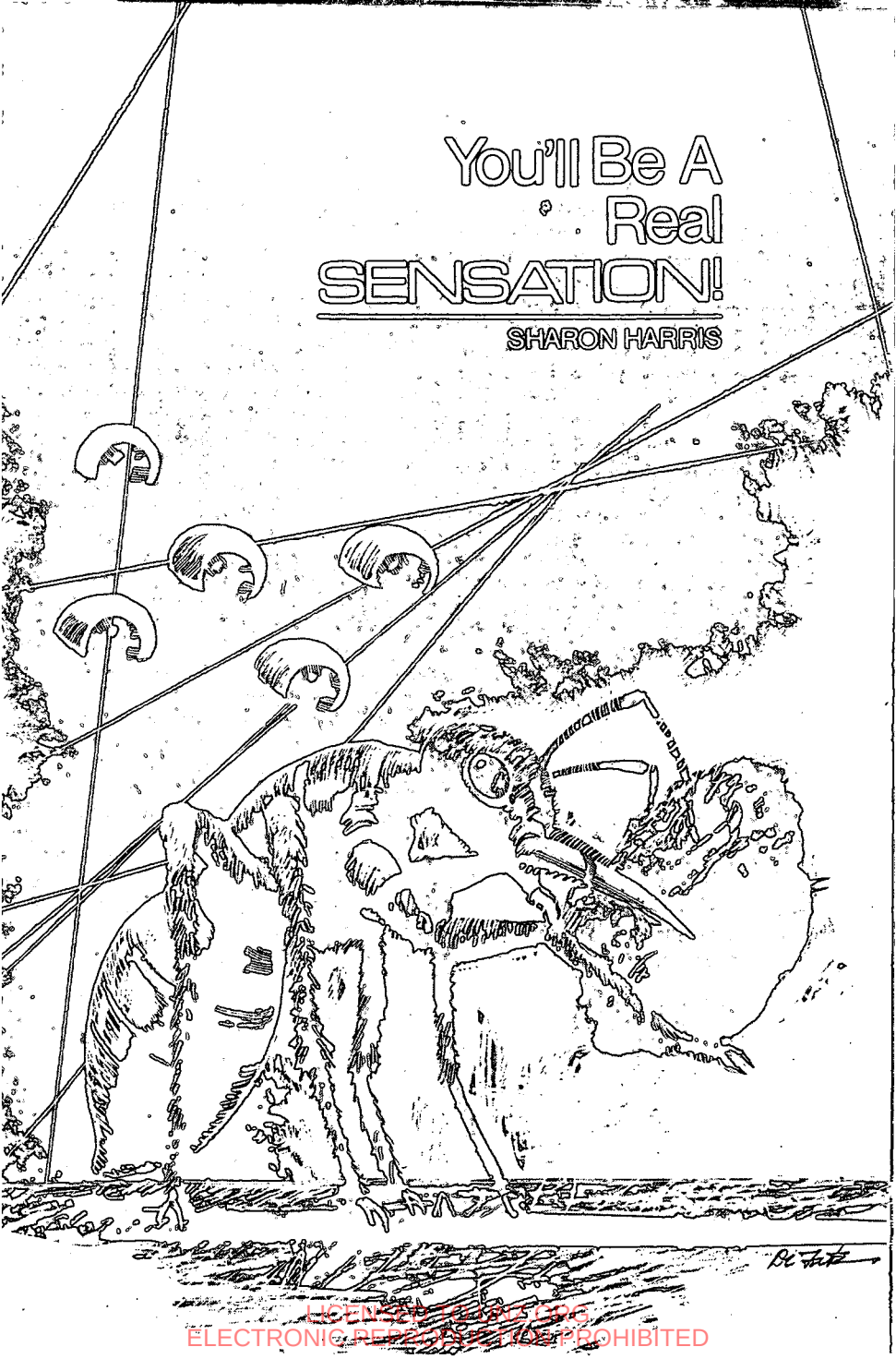
You'll Be A Real SENSATION!

SHARON HARRIS



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Some experiences are priceless—but still they must be paid for!

DO YOU REMEMBER how much you wanted that bone? How you hoped that she would give it to you and not toss it into the pot with the rest? Maybe she would leave a few shreads of meat clinging to it. How you pranced, your nails drumming a tattoo on the slippery kitchen floor. How you wiggled, your tail slapping quickly back and forth, your head bobbing like an idiot.

She told you to speak. Speak? Yes, you did, you spoke and spoke and spoke until she patted you on your head and ahhh—finally!—lowered the bone. You took it in your mouth, carefully, not at all *too* greedily. It felt hard. It smelled like animal. Beast. It was. You felt your mouth fill with saliva as you carried it proudly outside as she swung open the screen door.

And then? Faster, faster faster you trotted until you reached the shade of the maple. Then you dropped the bone onto the grass. Remember how you sniffed it, short little sniffs, then deep, long ones? Remember your teeth tearing at the meat? After cleaning it all off, you would thrust the bone as far back into your mouth as you could. Remember how your teeth would grind down on it, sometimes slipping and how, finally, you would shift it to another position holding it firmly with your paws to gnaw happily away once more.

Remember the taste and feel of the bone you had that summer day under the maple. Wasn't it the best bone you ever had? Not the meatiest, not the biggest, but, all-around, *the best bone experience*.

Don't you remember what it was like to be a dog? *Really?*

That's odd.

I do.

I think I liked it even better than finding that cookie crumb on the sidewalk as I was just passing the third crack. It seemed like a longer trek than usual, but oh, brother, what a reward!

I wasn't one of those who didn't watch what it was doing. I was scurrying right along when—you really wouldn't believe it—there it

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was. Almost as big as I was. And it was fresh. The biggest chunk of anything quite so marvelous I had ever found. I *had* to stop to admire it before doing anything about it. Think how we would all enjoy it. How envious everyone would be when they saw me walk into the nest carrying *that*.

It would absolutely stun them to think that I, last on the list of food gatherers, could have discovered such a lode. They would surely honor me for weeks to come, perhaps append a title to my name.

But oh! The thing itself. To look at that buttery honeysoaked crumb and to know it was mine, *mine*! The smell of it—truly I felt faint from the richness of this experience.

Then I set to thinking about how best to raise it. I began the task, finally shouldering most of it, the rest trailing only slightly behind me on the ground.

What?

Naturally you can't imagine anything more terrifying than what happened next.

Of course fear dried my mouth as I looked up—and up and up and up. I dropped the crumb, my treasure of treasures, and tried to run. Out of breath at last but quick, quick, quick. My legs ached, all of them.

Would I make it? It was too far, too far. The expanse of concrete stretched forever. The shadow deepened and I threw every ounce of energy I had into the last terrible sprint.

The sole of the shoe was almost over me. Two of my legs tripped and I stumbled.

The shoe came down. It rolled over me and—*and?* I and my body were not. Part. Of. Each. Other. Any. More. I know you have always wondered what it would be like to squish—and now you know.

I slid into some dark place and wasn't anything, anymore.

Did you ever think of yourself as sadistic?

Was that a thriller or not?

Thorgaad turned to Imgaad when it was over. She lay still, with all her eye rivlets shut, shudders rippling her entire surface like seawinds the ocean.

"Wonderful," she sighed. "Wonderful. I just know there's never been anything like it here on Hydran. How can I thank you Thorgaad? Well—time we were up and off to work. Seelgaad will simmer and fume if I'm late, but then I'm never late." She flowed out of her resting pod and into the next chamber. Thorgaad followed on her trail. Slimomat-deluxe padded along behind them, cleaning up.

On the way to work that morning, flowing with the rest in a steady stream, Imgaad kept her thinking separate as best she could and tried to decide just how she would repay Thorgaad.

She knew it was expected that she do so. But it would take all her savings and *that* probably would not

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be enough to really outdo him. She would check with Nefarian to see what was coming in next.

No big problem, really. Nefarian always makes things possible and you never have to pay until later. To Imgaad's thinking, later is later and now is now and never the twain shall meet. She was determined not to be the one to lose faces.

Doublewammy, doublewammy, how to swing a doublewammy, a really sensational experience. She could do it, she would do it and Thorgaad would be impressed. Points for Imgaad.

* * *

She need not have worried.

Everything was bound to work out.

That is, if you'll just *relax. Please,* try to relax. Now this injection isn't going to hurt. No, not one bit. Do you think I would lie to you—to *you?* What good would it do? The next time you would not trust me at all. And I told you the basis of our relationship is *trust.*

Now, breathe deeply, deeply. Didn't you practice your Lemaze? Don't you feel in control of the situation? Don't get hysterical or it's all over. And we can't have *that.*

The needle is predatory. It bites into the back of the hand, there, where the bones are so—vulnerable. And if you turn over, it trails along like a sharp toothed earthsnake whose lone spiked tooth has a tenacious hold on you.

Didn't you know you can't wear fingernail polish to the hospital? Well you know it now in case you're thinking of repeating the experience.

They want to look at your fingernails. Like some ancient tribal medicineman, divining entrails to foretell the future, the outcome of the whole shebang. You'll just have to take it off. And then they'll take off your unpublic hair, shave it off to a bare little fleshy mound with the goosebumpy look of a plucked chicken.

They're clearing the decks for battle.

You're the ship, ungainly ship.

Ohhhhh, oweee, that's sharp, a *good* one. It makes you gasp. What's that stomach doing? Grotesque, undulating, heaving, first like a malignantly overblown marshmallow, then taut as a watermelon.

The nurse is a dearsoul and she's in her element; she used to work at Buchenwald. She wants to take off your contact lenses. That's the rule. You say it's your rule that you be able to see, to defend yourself—what would you do without your *sight*?

She insists.

She comes closer.

If you shut your eyes, really tightly, how will she ever get them out? Will she pry your eyes open and gouge them out? Is—*are*—there any rules that say she has to leave

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your eyes intact, capable of seeing? The rule is that you can not wear your contact lenses here.

Help-help, somebody come and beat that woman away from here. Grab a broom, swing a lamp, but get her away.

The battle is postponed; her beeper calls her elsewhere.

Ponderously you move onto your left side, panting at the effort, the snake following. Your stomach is so distended that you hope that you don't droop over the edge of the hard, narrow bed. Will such weight in one spot tip the balance and pull you over the side. Would you burst there like a much-too-ripe cantaloup?

Contractions are zipping right-along. The magic in the IV bottle is dripping, dripping, down the innards of the snake, out its fang and into your poor defenseless bony hand.

Whooooooeeee. *This* isn't any fun at *all*.

Now it's more fun. Remember when you were constipated from eating all those apples when your parents left you for a week? You could not move a *thing* and were threatened by your pinch-nosed aunt with Mineral Oil and Worse if you didn't Move Them.

What business was it of hers? Only that at her house she liked things done right, on schedule. And, besides, you had to realize that you could obtain some dread disease, generated right there in the lower portions of your—ah—*trunk*. And if you didn't get rid of what you *had*, poor thing, what would you do with what was *coming*? Where would the next load of corn, boiled potatoes and stringy potroast go? You know you can't waste because of the starving of India. So it would pile up and up and up and finally you would rupture, surely pop, from the sheer volume of it all.

So—go to it. Take your Little Lulu or whatever else you want into the john and get to work. Such work, seemingly without reward. Grunt, groan, great-god-in-heaven, something will split asunder before that long hard brown beast finally makes its way out.

The final minute. Ah, relief. Rejoicing, primeval, infantile glee at having mastered The Art. Take it to Auntie? No? *No*. But she ordered you to call her because she wanted to see for herself you'd done it.

The Divulging of the Goods. Yes, that was—and is—*it*.

They're all standing around, now, the bunch of them, as the Snake sends its Pitocin into your vital bodily fluids to send you writhing and breathless into the Delivery Room.

Deliverance, oh. A masked cabal.

Push, they order. *Push* you primipara.

He has a mask, she has a mask, all of god's chillin have masks. Where is *your* mask?

The light is so bright. You don't need such an intense illumination

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you realize, unless—*is this grand opening being televised?*

That one! Mr. Bloodgut the Butcher. His instruments are all lined up and polished. Meet the meat. The meat is *you.*

Why ramble, mind? They said they wouldn't give you anything. Maybe just a little something?

The masked and the unmasked glare at each other. Are they trying to keep their germs away from you? You can't imagine kindness. Are the little bastards in their nasal passages fighting to get out and at you? Or do these *people* prize them highly and will be damned if they'll let any one escape.

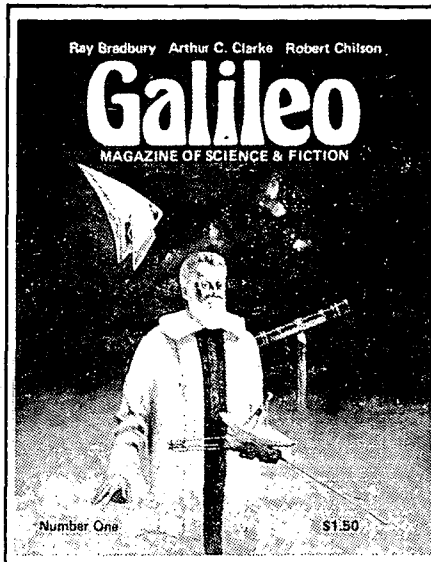
Gimme a mask, you snarl politely, *Why should I do without?* Could they want your germs to stay away from them? Will they mask the infant when it gets here? How could they possibly know, the sneaks, that you didn't mouth-wash before commencing labor?

You, the carrier of something unspeakable. Lethal? All must be protected, shielded. What, what, *what?*

The answer escapes.

Masques: disguises. Ha, not one is what he seems. Look at the eyes above the maks, eyes are the key, the clue. *That* one was once a rat before attending medical school. Such beady little eyes, such a lean and pointed nose. He's wearing a mask to hide his rat whiskers.

Sure. Understanding triumphant. If that lady from Buchenwald, there, had not strapped your arms



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down at your sides with those brown leather restraints, they know you'd rip their masks off and all would be revealed for the world to see. The Jewish Nazi-sleuth from Vienna would come and get you Buchenwaldhilda. *None of you wants the truth and pictures plastered all over the papers,* you think.

They are making *preparations*.

To do something with you, to you, if you don't mind—and even if you do.

They want to get at it. Spiteful primipara, why hold up the works? Why refuse to deliver the goods? That one, there: it must be Auntie. Take off your mask, woman. We know why *you've* come.

I'm trying to push it out, you pant. *Hold the mineral oil. Sheath your instruments.*

Whooopee! *Almost.*

A little more. A little more.

More and more and more and more.

Somewhere down the hall some woman is screaming her guts out.

Would it help to yell bloody murder?

Let's just forget the human race.

Human race?

Like long distance race?

The quarter-mile race?

The race against famine?

The race against time?

What the hell, let's forget the human race and do something else.

No. *Not* possible. Stop it! Let me float and suck my thumb. Swim a little, bounce a little, turn a little. Dark and warm and free from harm. Happy days and happy nights. I love to twirliewhirlie with the cord, like jumpidy-rope. Sloshing and rolling and rocking. I grab my cordiken, thick, thick cordiken and pull but not too hard: it pulses in the warm; it feeds me good.

Sometimes I wonder, but not often.

Usually what I like to do is move my meee. This and thataway, punch and pirouette, ram and butt-butt-butt soft walls that bind and love me all the livelongday.

I am meee and nobody else; even from the beginning I was and am.

What are they doing to my meee? Squeezing, pressing, pushing. I can't turn 'round and I am heading down, down. My head presses *there* and it *hurts*.

How can I fit through that stingy gap? I can go no further. My watery has gone sluuurp, gush, away, before me in a rush and. And?

On and on and on but so slowly-oh.

My head explodes. Something hard has got it. Claws, yes. I can not see. It pulls me, drags me, crushes my soft little headiken.

Blind? I never thought so there, but now? *What* is this unhome undark place?

It has me now. Holding me up by my footie, jerk! My back so long so curved and cushioned, feels like it is snapping at each little knob and cleavage.

It hangs me upside down, swing-

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ing, my head throbbing, my skin cold and drying.

I am dying. Don't you *know?*

Feel for me.

They are killing my meee, you, us.

It is hitting my back.

I scream.

They are happy that I scream and I scream some more and at last it lets me down.

And they have taken away my twirliecordie, cut it off.

I scream some more because they like it and maybe let me be.

Even with my eyes clenched shut the light is too much, too much.

I want to go home. *Home*. Back.

But you must know that you can never go home.

You are absolutely exhausted, both of you. Mother and child, infant so tender and mild and, motherdear you did like we knew you could.

Neither of you remember all of that?

Strange, what a pity, what a waste.

I remember for you and we can do it again.

Think how lucky we are to share such an experience. How is your baby, Thorgaad?

"What do you mean, my baby. I am the baby. Also."

"Such an intense and moving experience, Thorgaad. Shall we recommend it to our friends? Or claim an exclusive?"

"Imgaad, did you go to that

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Nefarian for this? How much did you pay?"

"Don't you splash at me like that, Thorgaad, you have no right. I will not be beholden to you. What did I promise Nefarian? Anything he *wanted*."

"Anything he wanted?" Thorgaad rose in a wave and spilled to where she dripped. "I can tell by your dripping that way that you are hiding something from me. Now: What is it, Imgaad?"

"Nothing. I had to promise Nefarian anything to get what I got for you, us. He promised me that he has never been able to offer such an exciting doublewammy, such an intense experience, to any Gaad on Saternia. I was bidding against twelve others for the experience."

She waited for his comment. "It was a real masterpiece, Thorgaad. How often is it that you can experience a real Masterpiece?"

She was dripping faster now, part of her had puddled by the pod. Thorgaad became alarmed. She must be more than nervous, she must be distraught. "*What* did you promise, Imgaad?"

"I told you—anything he wants."

"Which is?"

"I don't know. He didn't say what he wanted."

Thorgaad pulled himself together, pulsating, pouring jerkily from one side of the chamber to the other. "I'm beginning to think that this whole operation of Nefarian's should be banned on this planet. I propose we send a dribble to that effect to the protectorate."

"How could you live without your sensations, Thorgaad?" Imgaad wept, untidy drops spattering the floor by her. "It's the only thing that keeps you separate, that makes you *you*. Otherwise you'd just be part of the common stream. Melded, welded, blended—washing and flowing together are we, common parts of a common tide. That's all you or I had ever been until Nefarian arrived."

She sighed. "Maybe I shouldn't have promised him *anything*, but there was no other way to get it. A one of a kind, he promised. Besides," she said, "You know I'd rather dry than accept charity."

You, there, surely remember how it was. Chewing together, squishing together, birthing both of us together. Some never share an experience like that in a whole planet's turn, or, even, *ever*.

* * *

I know you are feeling for Thorgaad and Imgaad. Who could help it?

What happened to the chamber? Who knows?

Could the tragedy have been avoided?

Yes, I know you feel it was the worst thing that could happen to a Gaad.

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Shall I help your memory, just a little?

First you surely recall you were all set to leave the chamber. What a let-down the day would be after The Experience. Credit was no longer valid with Nefarian since you had mortgaged to him anything he wanted.

Was it Nefarian who was responsible for jamming the door? And Nefarian who made the windows stick? So there was no way you could leak out?

When the suns came out, it became clear we were all in for the hottest day in planetspans—yes, it will surely be recorded so in all the history tapes for the future.

Recall how quiet the chamber was? Such efficient sound insulation.

You tried the communicator. Maybe they hadn't turned it off, yet, as they had threatened. A shame you had used all your tokens for your wild experiences and hadn't paid your utilities.

"Harkenharkenharken," you bubbled into the transcommunicator. "Emergency, emergency."

"You may pay your bill at the highgully station during the hours of duskcool and your communicator services will be restored," the recording simpered.

Warmer, even warmer.

Hotter, even hotter.

You looked at each other. There was less left. Should you combine? Maybe you could make it until the suns went down. Such a decision. A blending for all time it would mean, if you managed to survive the heat. You were too tacky, too thick, to ever be pulled apart at this state.

How horrifying to see first a little of one, then the other, turn to steam, then disappear into the plaster of the ceiling and walls. Less and less. Oh, the sensation was the more poignant because your intentions had been so good. Brave Thorgaad, giving your Imgaad the experiences of lifetimes she could never live. And the Honor of Imgaad, repaying doubly over with the finest doublewammy Nefarian had offered, ever, to Hydran.

And now? Isn't it becoming difficult even to *think*? The outlines of the chamber are vague, smeary. You are both boiling down to a thick, sticky ichor, clinging to the central pod. Imgaad, there is just enough flow left for you to reach your beloved one. So, Thorgaad, strong Thorgaad, stretch—*stretch*! Yes, like that. Trickle, trickle, you can do it—of course it is hard when you're so viscous. But that too is a new sensation, heywhat? Almost there now, ooze a bit more—you, too, Imgaad.

Will we ever be able to be reconstituted, Thorimgaad?

I must admit, truthfully, that it is doubtful.

You said you would rather dry than accept charity. And so you have.

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Such a sweet but bitter experience, don't you think?

Do you think old Nefarian should be kicked off the planet Hydran because he delivers what his customers want?

* * *

"Nefarian, you rascal, you did those poor things in just to make a fast buck here on Clementia!" The plant waved its leafy tentacles at the timetrader. "Excuse me, Nefarian, while I bloom." The giant plant huffed and puffed and voilá! it was covered with cow-sized flowers, red, velvety, like double gladioli.

Nefarian waited until the most intense of the plant's parfume had been wafted elsewhere by the winds. "Once you have bloomed, Clemintinien, you know you're really going to be tied down. So many responsibilities you'll have from now through harvest."

The Plant shrugged. "I know. The blooming is something everyone should experience, but the time between that and fruitdrop is a drag. Routine, dull—if there were only some way to break it. At least I'll have the Gaad experience to think about."

"You can have more than that, much more. You've already paid in full, just for letting me watch you bloom. And promising me some fruit from your next dropping. I know you know how valuable it is elsewhere. It'll be a real novelty of course, but may become one of the most sought-after items on my route." Nefarian stroked one of the flowers. It pushed toward him like a cat when petted.

"Let me ask you, first, Clemintinien, if you didn't think the Gaads were sensational. Yes? You know, I have others, a plethora of diversions which can make this fruiting the best time of your life. Price? Why ask. We can come to an agreeable solution between now and your next bloom. Can I ask you? It looked so easy, the way you did it—"

"Oh it was, this time," the Plant agreed, rustling its flowers provocatively. "But sometimes you wouldn't believe the complications."

Nefarian smiled his many understanding smiles.

"There is someone somewhere who could believe it. *I* could believe it," the timetrader said.

Perhaps you have never wondered what would happen if the Venebees refused to pollinate your Etrusian stamen. No? Beyond belief! Try to imagine: surely no where in the universe, is there such pain, anguish, suspense as to what will happen.

And then, when the Venebees come—what excitation, what joy, a resurrection and *more*. To *know*, you must *become*.

Worth your *while*? No, worth your life. Would Nefarian lie to you? ★

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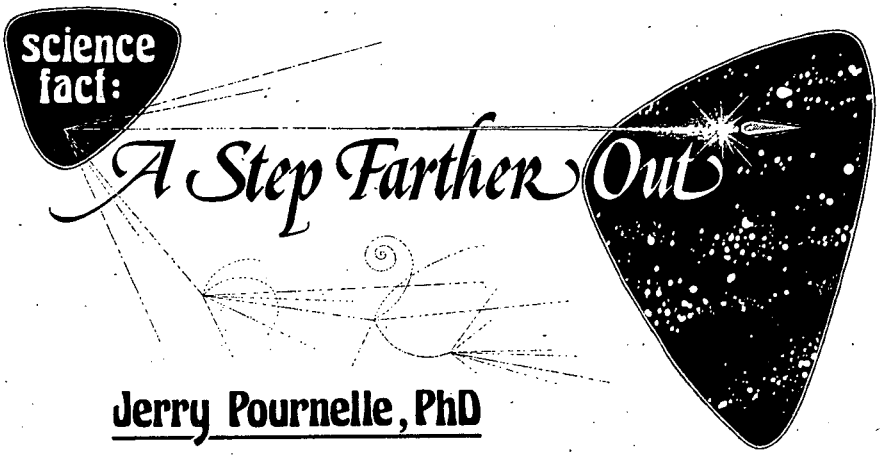

Jerry Pournelle, PhD

FUSION WITHOUT EXLAX

IF A MAN TOLD YOU "The only physics I ever took was Ex-Lax," would you put him in charge of nuclear power policy?

That's not a trick question. The founder of the California People's Lobby once said it, and he was the architect of the Nuclear Shutdown Initiatives.

I've started this column four times, and I'm still not happy. The problem is this: I want GALAXY readers to support a research project I'll tell you about shortly, but I don't want to add to mythology; and the project involves fusion.

There's the rub. Alas, "fusion" has in all too many places and for all too many people become an incantation, a magical formula which, when uttered, ends all rational debate about power policies.

In fact, the situation is worse than that: "fusion" is a good word, and fusion scientists are white magicians: "fission" is evil, and its supporters have made deals with Satan to loose the evil djinn Plutonium onto this world. In these days when our representatives have shunted off primary responsibility for power policy decisions onto the general public, it's important—at least to me—that the public deals in physics, not myth.

Now science fiction readers, unlike the Ex-Lax expert, are seldom *proud* of ignorance; indeed, from

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the letters I get, and the audience response during my lectures, the opposite is true. SF readers often know very much more about technology than the general public does—and yet are often conscientious enough not to get into the debates, because they know enough to convince them they've no right to fixed opinions. That's admirable, but it may prove disastrous: carried to an extreme the trend means that only the opinionated and truly ignorant have a voice.

Therefore: I want to plug electron-beam fusion research; but I want your informed support, and since I know, again from my lecture tours, that an awful lot of people don't really understand either fission or fusion, I'm going to start with the basics. My apologies to those who find this discussion elementary. I will try, for the benefit of those whose only physics are Ex-Lax but who don't boast about that, to keep this reasonably simple.

* * *

$E = mc^2$, saith Einstein; that is, mass (m) can be converted into energy (E). To be precise, energy in ergs equals converted mass, in grams, times the square of the speed of light in centimeters per second. Light-speed (c) is 3×10^{10} cm/sec, so converting a gram of mass to energy would yield 10^{21} ergs, something like 100 kilotons, or about 100 times as much energy in all forms as the average used by each person in the U.S. last year.

The equation says nothing about how that energy comes out. A moment's thought will show you that can be important. If it all comes out as neutrinos it won't do us much good. There's no way to catch them. If it comes out as protons or electrons, we're in good shape: they're charged particles, and we can pass them through a ceramic tube with coils of wire around it to get electricity directly. (That last trick is called magneto-hydrodynamics, (MHD) and it's a bit more complex than it sounds; but we know how to do it. It only takes energetic charged particles.)

Unfortunately, most nuclear reactions do not produce charged particles. A great deal of nuclear energy appears as neutrons, and we can't catch them in a magnetic basket. What we can do is put something in their way. They get slowed down, or stopped, and their kinetic energy is converted into heat. We extract that heat, use it to boil water, and put the water through turbines. The turbine neither knows nor cares where the heat came from; it's all the same to it whether the heat source was burning coal, fissioning Uranium, or fusing Hydrogen.

The turbine system is the most efficient thing we've got for turning heat into electricity; but it's not 100% efficient and never will be, nor will anything else, including MHD. Thus let's dispell the first

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myth about fusion: it *may* be marginally more efficient than either fossil energy or fission, but it will still have waste heat, and will still require cooling systems. No one really knows the effective operating temperatures of fusion devices—we haven't even got anything that works in a laboratory yet—but if we assume they'll be hotter than either coal or fission, fusion systems will be somewhat more efficient than those we've got; but not all *that* much more so. Known efficiencies for fossil and fission plants, and assumed ones for fusion plants, are given in Table One.

Fission systems work thusly: a neutron source is brought near an atom that breaks apart. Neutrons are emitted. Other atoms are broken into lighter elements and more neutrons. Some of the additional neutrons are used to break up even more atoms (chain reaction), others are allowed to bombard useless stuff like Uranium-238 and turn it into useful stuff like Plutonium-239, and the rest are caught for their heat energy.

Fusion goes the other way. If you squeeze hydrogen atoms together and get them hot enough, they turn into helium. The resulting helium doesn't mass quite as much as the original hydrogen: result, energy. It sounds simple, and it is. This is the reaction that powers the Sun. Unfortunately, we don't know how to do it, and we may never learn. Certainly we haven't even a theoretical clue as to how to bring off stellar fusion; the temperatures and pressures involved are plain beyond us.

So, we go to the next best thing and use Deuterium, which we'll call "D". There are two reactions:

$D + D \rightarrow T + p + 3.25$ MeV (22,000 kW-hr/gram) Eq. 1

and

$D + D \rightarrow {}^{3}He_2 + n + 4$ MeV (27,000 kW-hr/gram) Eq. 2 and I'd better explain what all that means before I lose someone.

TABLE ONE: Power plant efficiencies.
(Percentage of generated heat turned into useful electricity.)

	Coal	Nuclear Fission	Deuterium Fusion
Average in present use	32.53	31	____
Best in present use	41	39	____
Expected with improvements (Theoretical: includes MHD)	55	52	66 (?)

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First, Deuterium is "heavy" hydrogen. Ordinary hydrogen atoms have one proton (p) and one electron (e), and nothing else. D has an additional neutron (n); it could be written as $^{2}H_{1}$ where the left superscript is the atomic weight, H is the symbol for hydrogen, and the right subscript is the atomic number.

Tritium, (T), is "superheavy" hydrogen with 2 neutrons, and could be written $^{3}H_{1}$. By the same token, $^{3}He_{2}$ is "light" helium; normal helium is $^{4}He_{2}$, and this stuff is missing a neutron.

For reasons we won't worry about here, it's convenient to measure nuclear energies in Millions of electron Volts (MeV), and I've given the textbook figures; for our purposes, though, the kiloWatt-hours per gram of material fused is more relevant. For comparison, a regular 100-Watt lightbulb will use 876 kW-hr each year if left burning; obviously a 1000-Watt heater uses 1 kW-hr each hour. A kW-hr of electric power costs between 1.2 and 5¢ to generate, and is sold to the consumer for from 2¢ to a dime (although I understand that lawsuits, strikes, and interesting administrative methods have got New Yorkers paying about 20¢/kW-hr).

The two reactions shown are equally probable. Both go on at the same time, and there's no known way to favor one over the other.

The Tritium and "light" helium can themselves be made to react with more D, as follows:

$D + T \rightarrow {}^{4}He_{2} + n + 17.6$ MeV (94,000 kW-hr/gram) Eq 3

and

$D + {}^{3}He_{2} \rightarrow {}^{4}He_{2} + p + 18.3$ MeV (98,000 kW-hr/gram) Eq 4

and I'm not giving these equations just to show off. Look at them a moment.

First, note that Tritium. It's radioactive with a half-life of 12 years. We can burn up most of it with the eq. 3 reaction, but we've got to keep it from getting into the atmosphere. It's in the same situation as Plutonium: a useful product that we need for power; and it should suffer the same fate as Plutonium, "burning" in a nuclear reactor. Until it is "burned" though, it's one of the hazards of the power system, and there's no way to change that.

Second, note those neutrons. They must be caught if we're to extract their energy. When neutrons hit other atoms, they produce radioactive isotopes. Clever design can minimize the number of truly dangerous radioactive waste products, but can never eliminate them entirely. Thus the fusion industry will need nuclear waste-disposal, and there goes myth Number Two. True: fusion is cleaner than fission power systems; but it is not *that* much cleaner.

Third, the fuel isn't free. We can't use ordinary hydrogen; we have to extract the D from it, and that takes energy; thus, at first, fu-

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sion plants will consume more energy than they produce—just as, for the first years of their lives, fission plants haven't produced the energy it took to refine their fuels, or coal plants the energy it took to mine the coal. All will, of course, show a net energy profit after two or three years.

And finally there's the *real* problem: we don't know how to do it. The basic equations for Uranium fission were known for a long time before Fermi built his "pile" in the squash court of the University of Chicago, and nature was *very* cooperative anyway: the materials needed for Fermi's experiment were cheap, easily available, and simply fabricated; the instrumentation was standard; and the control system was uncomplicated. Despite the ease with which Fermi demonstrated the feasibility of self-sustained controlled fission (it worked first time), it took twenty years to get usable power from a fission reactor.

There's no reason to believe the engineering of a practical fusion power plant will take less time; and we are not yet to the squash court. We don't *know* that we can do it at all—and we're certainly a long way from running our TV sets on electricity produced by fusing D. *I have never found an expert who believes we will have a working commercial fusion power plant in this century.* The only people who say different are not in the game—and many have very large axes to grind. "Waiting for fusion" is simply not a feasible power policy. There goes the fourth myth.

Depressing, isn't it?

Cheer up. First, we don't *need* fusion. There are other ways to power our industrial civilization; other ways to spark the Third Industrial Revolution. We can all get rich even if controlled fusion never works. That ought to be good news. Here are some methods.

* * *

First, my favorite, the ocean-thermal system, which makes use of the temperature difference between warm surface water and cold bottom water. There's more than enough power in the Tropics to run the world, the Sun renews it constantly, and we know it will work because a working plant was built in 1928. However, my engineering friends tell me that's the hard way; and we aren't likely to have operating ocean-thermal systems before the year 2000 anyway.

So what are some other ways? Here's where I get into trouble. The easiest way of all is one we have now: good old reliable (average nuclear plant operates 9 mos. each year; fossil, 8.2 mos. each year) nuclear fission. It already works, and we've already mined enough potential fuel to last us several hundred years; moreover, there's enough U-238 in ordinary rock to

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operate the world high-energy economy for millenia.

Alas, that takes breeder reactors, and they're controversial. They make Plutonium, and everyone knows that Plutonium is "the most toxic material known to man." Ralph Nader has told us so. Of course Ralph Nader is also the man who, with fanfare, bought a manual rather than an electric typewriter "to conserve energy". My electric uses the electricity generated by about a quarter of a cup of oil each year; if everybody, all 230 million of us, had an electric typer going they'd consume a few thousand barrels of oil annually: not very much in an economy that measures oil consumption in millions of barrels a day. Maybe we ought to take a closer look at some of the other things Mr. Nader says. His heart's in the right place, but he doesn't seem able to do much quantitative thinking.

Toxicity of Plutonium compared to other substances is shown in Table Two. Now we don't spread much botulin around the landscape, but we do spray crops with arsenic tri-oxide; in fact, we today import 10 times as much arsenic as we'd have nuclear wastes if the entire US electric system were run on nuclear fission. Now I keep telling myself that I am NOT going to write a paper in defense of nuclear fission power; that it's a political matter; but dammit, at least the public debates ought to make *sense.* It's one thing seriously and soberly to debate the advantages and disadvantages of fission over fossil fuel; but it's quite another to have such an important issue decided by mythology and demonology.

One last thing, then: nuclear wastes are radioactive. There. That ought to end the debate. Surely no one wants "nuclear pollution". If I sound sarcastic, my apologies; somebody really and truly said that to me not long ago. Meant it, too; and she was an important political party official.

So let's look at radioactivity in quantitative terms. Table Three

TABLE TWO:
Toxicity of various substances.

	Lethal doses per spoonful
Arsenic Tri-oxide	50
Botulinus toxin	125,000,000
Plutonium oxide (ingested)*	0.5

* metallic Pu is never employed in reactors.

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shows the dose in millirems (thousandths of a rem) received by each US citizen on the average. Further, let's add a couple bits of information: of the 24,000 survivors exposed to 140 rems (140,000 mrem) at Hiroshima-Nagasaki, fewer than 200 hundred died of cancer. The probability of developing cancer from radiation exposure is about 0.018% per rem (not mrem).

At this point in my lectures someone generally says, loudly, "sabotage!" Nuclear plants are vulnerable to that, aren't they? Well, yes; but not very. The 4" steel and concrete containment is designed to take an aircraft crashing into it without rupture. Anyone stealing nuclear fuels for terror purposes has set himself a pretty suicidal task, will need vast technological resources, and won't get very many people fast—what's the point of threatening people with an increased probability of cancer 15 years after you set off your infernal device? Plastique will do a more spectacular job.

In other words, if we're going to debate power policy, let's do it right, with comparisons of risks, not scare statements. I'm willing; if you're interested, my lecture fees aren't too high, and you can get me through this magazine. Be prepared to pay expenses.

This has taken us a long way from fusion, hasn't it? No; because

TABLE THREE
Sources of Radiation Received by Average US Citizen (Annual)

Natural Sources	milli-rem	Man-Made Sources	milli-rem
Cosmic Rays*	35	X-ray, diagnostic	103
Building materials**	35	X-ray, therapy	6
Food	25	Radio-pharmacy	2
Ground	11	Global fallout	4
Air	5	Color TV	1
Own blood (K-40)	20	Nuclear Power plants	.003
		If live at boundarys of nuclear power plant	5
Total	131	Total	121
		Total annual	252

* Varies with altitude; greatest at high altitude cities.
** Varies with material; greatest with brick and stone.

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fusion, like other power systems, needs to be discussed in context. I will not recommend fusion research as a magic remedy for the world's ills.

I do recommend it, though. For all its disadvantages, fusion will be, if it works, the power system of the future.

First, it's very fuel-efficient. If we can extract all the energy from our D, we get an average of about 100,000 kW-hr/gram, which is 4 times the energy per gram obtained by fission reactors, and ten million times the energy/gram from burning fossil fuels. A few thousand metric tons of D each year could power the world.

Second, the fuel's not hard to get. There is about one atom of D for every 6,000 atoms of ordinary hydrogen. The world's D supply could come from under fifty plants with water intake valves ten to twenty feet in diameter. By world's energy supply, I mean the equivalent of some 20 billion barrels of oil a day—more than enough to let Ralph Nader have a new Selectric.

Third, we can never run out of D. There are billions of cubic kilometers of water on this Earth, and at a cubic kilometer each year we'd be able to run a long time; nor would we, as I've heard someone say, "lower the oceans"; at least not more than an atomic diameter or two.

Fourth, fusion is certainly preferable to fission: the waste-management problem is much simpler. There are fewer long-term radioactive wastes to worry about. Although we can and will (and already have) shipped tons of Plutonium around without anyone being injured, the stuff *is* unpleasant, and we'd be better off without it even if fusion won't eliminate all nuclear wastes.

So how do we do it? There are two major theories on how fusion plants might work. First, remember that the goal is extremely high temperatures and pressures. You can't contain them in a material object, because either your reaction melts your container, or your container cools off the D and prevents the reaction. Thus non-material confinement systems, which means in practice Magnetic Confinement. The lion's share of all fusion research goes to that. The problems are hairy: both engineering and scientific questions remain unanswered.

The equipment is huge, complex, and (need I say it?) costly. There are blind alleys. We had stellerators, and magnetic rings, and various kinds of pinch-bottles, and every one of them failed. It isn't that they weren't worth building, understand; we have learned a lot about magnetohydrodynamic stability of plasmas (there's a buzz phrase for you). The current approach is a device called a tokamak, and if you need to know more about those go to your nearest library. Magnetic confinement isn't ex-

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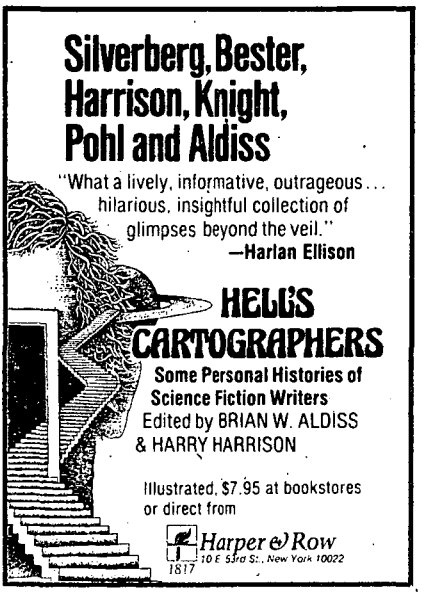
pected to produce fusion neutrons for another ten years, and few think it will, even in the laboratory, produce more power than it consumes before 1990. It gets plenty of funding.

The second approach is called Inertial Confinement. This consists of taking small pellets of D, or a D and T mixture,, and zapping them with lots of energy. The zapping has to be done just right. If you're not careful, too much zapping energy gets *inside* the pellet and tends to disrupt it before fusion can take place. There are other failure mechanisms, such as lopsided zaps, and not enough zap power.

Inertial confinement has this advantage: it is pretty certain to work. That is, the problems are more engineering than scientific. It may never work *usefully,* but it almost has to work if we get the geometry right and shoot enough power to the pellets. It has a second advantage: the equipment is much cheaper (for laboratory demonstration reactors; not necessarily for a working commercial power generating system). Thus Inertial Confinement gets about 10% of the fusion research budget.

There are two branches of Inertial Confinement: laser (photon) bombardment, and particle bombardment. Of the research money in inertial confinement, 90% or more goes to laser systems. There's a reason for that: laser bombardment just may have produced fusion already. There was some fanfare a few years ago when KMS Inc., a private company, seemed to have obtained fusion neutrons. There's still some question about just what KMS did or did not achieve, but most fusion people believe that laser bombardment will eventually work out. Right now they're looking at different kinds of lasers, and may have to invent a new one (called Brand X Laser) which will zap the pellet with enough energy, yet won't penetrate the pellet too fast. I don't know whether laser inertial confinement gets enough money or not, but I suspect they do.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Comes now (finally!) the point of this column. On a recent lecture tour I visited Sandia Laboratories (a government-owned non-profit corporation) in Albuquerque, New Mexico. I went through their labs, and I spent a good bit of time talking with Gerald Yonas, the fusion project manager. I came away a believer.

Sandia is the only place that is trying electron bombardment in an inertial confinement system. Their current budget is about five million dollars a year for that research. That, in my judgment, is peanuts: especially in view of growing evidence that electron bombardment may be *the* way to go. Sandia may, just may, have caught the brass ring.

Why do I say this? Well, first, the Soviets are trying electron bombardment, and they claim to have produced about 10^6 fusion neutrons in each reaction. That claim is open to some doubt. Official American reaction is "Congratulations!", and, in private, the comment "That may put them a few months ahead of us". *Very* private reaction from many US experts is more sceptical. The bombardment process itself produces about 10^9 neutrons. Now, 'tis true there's a way to tell fusion neutrons from other neutrons; but it takes very sophisticated instrumentation, and many doubt the Soviets have it. Then too, the Soviets produced their announcement as part of the 25th Party Congress shindig, and gave absolutely no technical details, which is suspicious. For all that, no one would be *that* surprised to find that the Russians have indeed brought it off. After all, we expect to within a year.

* * *

I have watched a man spend four billion dollars an hour on electricity. It made him unhappy. He wanted to spend a trillion an hour. It happened at Sandia labs: they were zapping a pellet with electrons. Of course they didn't spend four billion bucks an hour for very long: a few nano-seconds, to be exact, so the total cost of the electricity was a few dollars; but if they could have kept it up!

The Sandia equipment is impressive. It's also massive, as you'd expect, considering that they handle millions of volts. To get that they have to charge up enormous capacitance systems. Sirens wail, red lights flash, needles crawl across dials, just like in a good science fiction movie, and finally the technician puts his fingers in his ears. I didn't, in time, and the noise of a couple of mega-joules arcing into a target is not easily forgotten.

Even so, it's not enough. That's what costs the money: building equipment that will handle those voltages without breakdown (and breakdowns are *spectacular* around there; I didn't see one, but I saw in-

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sulators the size of a desk with inch-deep gouges burned into them). Then there's the triggering problem: that system has to discharge all its energy at the *right* time, and the right time is measured in billionths of a second. It's amazing that they can do it; but they can. I saw it done. Incidentally, the voltage amplifier systems they use are called Marx generators, which gives rise to a number of puns, political jokes and worse; when they were ready to fire someone shouted "Harpo's ready!" and another man said "Stand by to fire Groucho." Then there was the zap! and a million joules flowed for a few nanoseconds.

Mega-joules. A joule is 10^7 ergs. I was duly impressed until we got to talking after the experiment. The reason they don't have fusion yet is they just can't pump enough power through the system fast enough; but don't get discouraged. The amount of power needed isn't so very large after all.

In fact, we calculated that a Sears Lifetime Battery contains about 4 mega-joules; if we could just discharge it in a couple of nano-seconds we'd have fusion.

They're building a system that they expect will do the job.

At the moment Sandia hopes to be at the squash court stage by 1983: that is, by then they hope to have proved that electron bombardment, inertial confinement fusion will work and can, with a lot more skull sweat and good engineering design, eventually be part of a useful electric power system.

They're doing that on five million dollars a year. This is the system I mentioned in the beginning of this article. I think it deserves more money, because with more money they may get to the squash court before 1980. They don't promise it, but then they don't need much more money either; a doubling of their present five million annually would not only let them build more hardware faster, but also let them coordinate some theoretical work going on around the country, and bring in other scientists as consultants.

So: if you're in a mood to write your Congressman about energy problems, you might mention that here's a slot where, in my considered judgment, a few million bucks will do a lot of good. Please don't support this because you think it will get us to the year 2000; it won't. Don't support it because you think it will eliminate our need for nasty Plutonium. Do it as a present for your children; do it because we could use some decent national goals, and cheap clean fusion power is one of the better gifts the US could offer the world (and wouldn't it have far more beneficial and lasting effect than any billion-dollar foreign aid program you ever heard of?).

Do it because we can afford it, and maybe it's something we ought to do. ★

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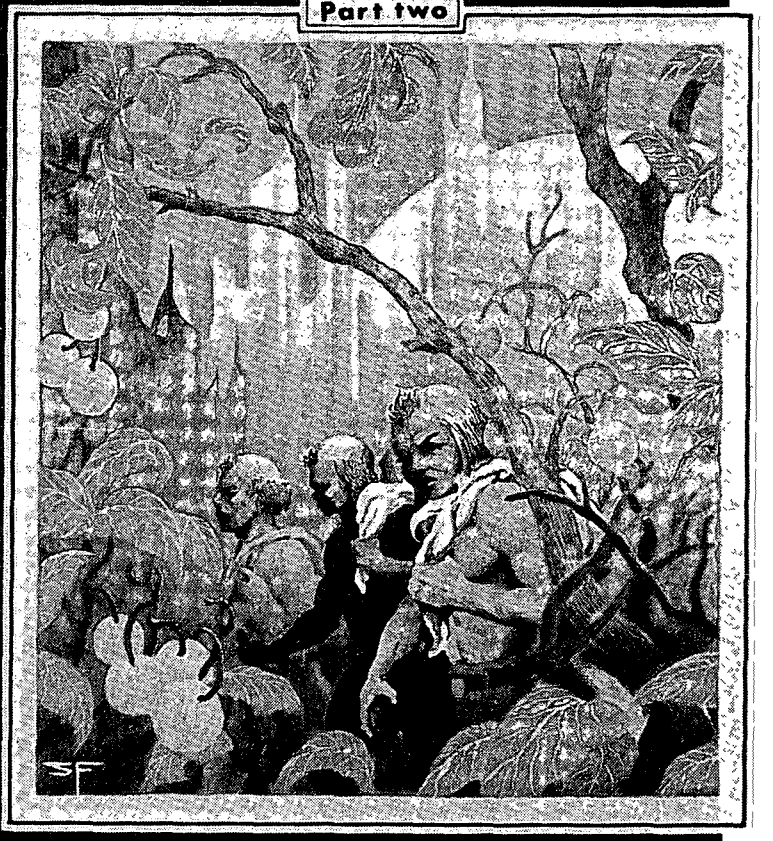

LARRY NIVEN

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Part II of III

WHAT HAS GONE BEFORE

Can this be the solar system? The sun has become much hotter than three million years of stellar evolution can account for. There have been radical changes in the topographies of Mercury and Mars and the atmosphere of Venus. Uranus is out of its orbit and missing some of its atmosphere. The only likely candidate for Earth now orbits Jupiter! And they're both too hot! But if this isn't the solar system, why is Saturn exactly where it ought to be?

It's driving PEERSSA crazy. Peerssa is a human personality recorded into a ship's computer. His changed state has made Peerssa more intellectually rigid than ever. Always a patriot, Peerssa is determined to find or rebuild the State as it existed in 2190 AD.

JEROME CORBELL's motives are different. Corbell is a fragile old man. Born 1921 AD, he lost most of three million years in the gravity well of a gigantic black hole at the galactic core; but he has only years or months to live. He chooses to land on Earth and explore while his life lasts.

Failure to communicate: he lands in the wrong place. The new east coast of North America is far too hot for life. Try Antarctica? Corbell, his life limited by his pressure suit batteries, searches a dead city to find teleportation booths that don't send far enough; then a subway network that might.

It developes that the undersea subways have been gimmicked by MIRELLY-LYRA ZEELASHISTHAR, an evil old woman with a remarkable cane and a remarkable mania. Corbell winds up as her prisoner, in country cool enough to be habitable.

Mirelly-Lyra was born 50,000 years after Corbell's proper time. She too has traveled to the galactic core. She returned much earlier; she knows something of the degeneration of the State. But her main concern is the Dictator immortality, which was somewhere on Earth when she landed, and which may be still available, she believes, over a million years later. Her small "zero-time jail" preserved her; *why not the eternal youth treatment? But she has been unable to find it.*

Instead, she will settle for medicines more advanced than her own, brought back to Earth by a space-traveler who must have left the solar system thousands of years later than she did.

Which is to say, Corbell.

Corbell's protest brings a touch of the cane, which brings unbearable mental agony. The lesson is effective. Corbell lies. Yes, he has the medicines, but they are aboard ship, in orbit. He himself is still ambulatory at around five hundred (he tells her). They can't reach the ship unless Corbell calls Peerssa first, via the radio in his pressure suit helmet.

Peerssa doesn't answer.

Corbell uses a teleporting "phone booth" to escape. But he's half-sure Mirelly-Lyra can track him.

He is moved by more than fear now. So the old woman would steal advanced medicines from a later age, would she? Two could play at that game.

STEALING YOUTH—

HE STAGGERED THROUGH clean, geometric, empty, sound-deadened corridors. Doors did not drop for him. Twice he tried holding his

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plastic disk against what he thought were entrance plates. It was all he could think of, and it didn't work. Whatever this place was, Corbell—or the dead man he had robbed—was not authorized to pass these doors.

The suit became too heavy for him. He dropped it.

He talked to the helmet, but it didn't answer. Where the hell was Peerssa?

Corbell had freed Peerssa from all orders past and future. Corbell had gone unprotected into an unknown environment; had later dropped out of communication. J. B. Corbell, Mark II: missing, presumed dead. By now Peerssa could be rounding the sun on his way to some nearby star. Searching for the State.

Peerssa's interstellar laser beam could have burned the old woman down as she crossed a street. But Corbell's computer had abandoned him . . . and Corbell hurled the helmet viciously into the cloud-rug—not as hard as he wanted, because his hands were still bound. The blind faceplate stared after him as he went on.

His legs were starting to cramp.

The clean air was turning musty with the old smell of something truly dead, when Corbell came at last to an open door. He thought the mechanism had failed . . . and then he saw why. A small hole had been burned through the gold plate.

Beyond the doorway was cruder damage and a richer smell.

It had been a surgery, he guessed. At least, that looked like an operating table with machinery suspended above it, and the machinery included scalpels on jointed arms.

There were crumbled brown skeletons. One, naked, lay in a pool of dust on the table. Two others sprawled against a wall. Their uniforms, partly decayed, were yet in better shape than the bones within. The cloth bore charred slashes that continued into the bones, as if men had been hacked by a white-hot sword. These men had been man-sized, Corbell's size.

The wall behind the desk had a hole in it big enough to drive a car through. Bombs?

Corbell heaved himself up on the table with the skeleton. He rubbed the bandages against a scalpel edge . . . .and behold! His wrists were free.

Now he moved to the great gap in the wall. He was getting his breath back, but his heartbeat was fast and fluttery. What he wanted most was a chance to lie down and rest . . . until he looked down into the vault.

It was two stories high and windowless. To the left, a thick circle of metal almost the height of the wall, with a stylized ship's wheel set in it. It looked for all the world like a bank-vault door. There were guard posts: glass cubicles set just below the ceiling, and in the cubicles were skeletons armed with things like spotlights with rifle butts.

A bank vault seemed out of place in a hospital.

There were shelves on all three walls, floor to ceiling. The few items still on the shelves were not gold bars. They were bottles. The floor, ten feet below Corbell, was covered with broken glass.

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There was a half-melted metal thing very like the animated dishwasher that had attacked Corbell and Peerssa as burglars. Other machinery looked intact. There was an instrument console that might have been (given the hospital *motif*) diagnostic equipment. There were a matched pair of transparent "phone booths", glass cylinders with rounded tops. Corbell saw these and lusted.

The invaders had brought a ladder.

He climbed down carefully, treating himself as fragile. Four skeletons at the bottom showed that the invaders had not had things all their own way. He stepped carefully among the bones. As a hospital the place made a good crypt . . . better than most, in fact. Cool. Clean. No insects, no scavengers, no fungus.

But it wasn't death Corbell was running from. It was a silver cane and a change more humiliating than death.

The lights were still on in the vault. Indicator lights glowed on the console. With luck the booths would work too. He stepped into one and looked for the dial.

No dial, just a button set in a slender post. No choice about where he was going. Corbell wondered if the Norn would be waiting at the other end. He made himself push the button anyway.

Nothing happened.

He cursed luridly, pushed out of the booth and tried the other. The second booth didn't even have a door, and there was fine dust floating in it. What the hell?

What *was* this place? The drugs on the shelves must have been incredibly valuable. Four human guards and a metal killer, a single door that looked like it would stand off an atomic attack, an instant-elsewhere booth with only one terminal and another booth you couldn't even get out of . . . an invading army willing to go up against all that, with bombs . . . and suddenly he knew where he must be.

It was a double jolt.

Those shelves must have held Dictator immortality. And they were bare.

Everything fitted. Of *course* you'd store geriatric drugs in a hospital. The booths must lead directly to Dictator strongholds . . . and even *they* could only appear in the closed booth. If the man in the booth wore the right face, someone outside could dial him into the booth that had a door. If not, he was a sitting duck for the laser weapons.

And the vault door might well stand an atomic attack. But thieves had come through a wall . . . and maybe they'd used atomics too. Did Mirelly-Lyra know about this place? She must. She'd have kept looking until she found it.

And so would Corbell, and she knew it: the Norn herself had told him about Dictator immortality. He had to get out of here.

Exhaustion had become an agony. He would climb the ladder if he must, if he could, but he tried the vault door first. And it was open! All of his strength and weight were just enough to swing it wide. The invaders must have left by the door they could not enter.

So did he, very gratefully. The

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line of "phone booths" was on this floor. He had walked a zigzag path from there; he might have trouble finding his way back—

He saw the booths as he rounded a corner. And he saw Mirelly-Lyra Zeelashisthar, holding her cane like a gun and squinting at something in her other hand. Just before he ducked back he saw her look up at the ceiling with her teeth bared.

It wasn't him she was tracing. It was his pressure suit helmet.

Peerssa, goodby. Corbell counted to thirty, then stuck his nose around the corner. She wasn't there. He tiptoed through the cloud-rug to the next intersection and peered around it. She wasn't there either, and he crossed the intersection at a leap and was in the nearest booth with the disc in his hand.

Mirelly-Lyra would not have liked the way he was smiling.

Two commas crossed; an S reversed; an hourglass on its side and pushed inward from the ends; a crooked *pi*. The corridors vanished. In blackness he thumbed the door open and stepped out into blackness. A gust of warm, damp wind whipped at him, and at the same time he saw dim light: a slender, hot pink crescent with the horns down at eye level.

He stood still while his eyes adjusted. A world took form around him.

He was on a flat roof, looking into a solar eclipse. They must be fairly common these days, with both Sol and Jupiter occluding so much of the sky. But it was beautiful, a hot pink ring lighting sea and city with red dusk. He wished he could stay.

Mirelly-Lyra must be finding his pressure suit helmet about now.

There were stairs. He would have been happier knowing how tall the building was, but he didn't. He had to walk all the way to the bottom—and he was reassured to recognize the lobby—pause for a precious moment of rest, then climb up three flights. Next question: had the Norn noticed that he had not closed the office door?

The sixth door was open a crack. He found a button blocking it. The door resisted his weight, gave slowly, let him in.

They must have turned these offices out like popcorn boxes, he thought. Did *this* office connect to the exploded bedroom? He had bet his life on it. He stepped into the booth and looked for the intercom panel.

Five buttons. He pushed the top one.

Through the glass door he saw a sand beach and lapping waves.

Ye gods, those booths along the shore must have been private intercom booths! The Dictators were selfish bastards, he thought; but his forebrain was occupied in pushing button #2.

Back in the office. He pushed #3.

In red-tinged darkness he saw a triangular floor plan, walls and roof exploded outward. A dark doughnut shape, coiled just where he would have stepped on it, raised a white face, questioningly.

He shouted, "Yeee*haa*!"

"Meep?"

He jabbed the fourth button down. The startled cat-tail vanished.

Sunken tub, shower . . . He

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thought of hot water and comfort and sleep, and the hell with it. Would the old woman set her private zero-time "jail" next to a Turkish bath? Why not? But he pushed the bottom button anyway, to see what there was to see.

Thoughts of sleep returned. His knees sagged. His muscles and bones seemed to be melting. But he saw. Ovens and cupboards to left and right. A long dining table, floating, and lines of floating chairs. The hooded Norn at the far end, and the silver cane foreshortened, end on. Behind her, shards of a picture window, and a bundle of thick cables running over the sill.

He stabbed two buttons and kicked out at the door.

II

He was trying to remember something. It was urgent.

—See now, I hit an intercom button, then the door button, then kick out. Or the other way around? Intercom, door, kick out. Didn't wait—*couldn't* wait—never thought so fast in my life.

Pressure on his ankles. He thrashed a bit, got his elbows under him to lift his head. The door of the "phone booth" was trying to lift under his ankles. Beyond, the great red sun was almost whole again, a chunk still missing behind black Jupiter. Closer: a desk floated above cloud-rug.

He smiled and closed his eyes.

It was seconds or minutes before he stirred himself. The sun was still cut by Jupiter. He stood on the door while he looked for something to wedge it.

Assume the Norn was still guarding her zero-time device and her drug supply. He hadn't seen it, but what else could the cables be for? It must be there, and now she knew he was after her drugs. By now she would have found that the intercom to the office wasn't working. She would assume that Corbell had blocked the door open. If it started working now she'd be through in an instant.

He couldn't let the door close. But there wasn't anything to wedge it.

She could be coming here now.

He'd barred her from the general "phone booth" system. Her car was here, just outside; she couldn't use that. So . . . yeah. Her fastest route was by intercom to the beach. Jog down to someone else's intercom booth, thence to someone else's office, dial for this building. By now she could be trotting down from the roof. And he still hadn't found anything to block the door!

He stripped off his undersuit and wedged it in the door. It was cool for a moment, until the sweat dried on him. Now he was naked . . . and ashamed; what he saw when he looked down was not a self to be proud of. But who would see him but Mirelly-Lyra? The old woman was probably in no better shape.

His personal possessions had dwindled to an ancient, withered body (stolen) and a single plastic credit card disc (also stolen). He took them down three flights of stairs and out.

The car was where they had left it.

It wouldn't start. He looked for a

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key or a key slot. If the Norn had taken the key he'd have to walk. He found a slot, empty, and said a bad word before he noticed its size . . .

The plastic disc fit it perfectly.

The cars must be public taxis. *That* was convenient. Now, if the cars' destination codes resembled the booths', all he had to do was punch for the police station. And get a gun!

As he reached for the keyboard his hands started to shake. Then other muscles were twitching, and suddenly he was in convulsions. Strange noises came from his mouth. In fury and despair Corbell realised that the felon's corpse had finally failed him; he was dying, and the timing was *wrong, WRONG*!

Please, no! Not till the battle's over–

He locked his hands together and forced them at the keyboard. He punched the compressed hourglass, tried again and missed, again and hit, had to stop for a minute. Neck muscles locked and twisted his head backward, agonizingly, and he saw a car coming around the gently curved drive like a homing missile.

The convulsions were getting worse. He stabbed at the hourglass key again, and again, and . . . He didn't know how often he'd hit it. When the car began to move he let the convulsions have their way.

Mental agony. Unconsciousness. Now convulsions. Maybe he ought to be compiling a list of what the silver cane *wouldn't* do.

It wouldn't stop a bubble car. The convulsions eased. Presently he could turn his head. Mirelly-Lyra was far behind him, out of her car, still firing. His motion carried her around the curve of the drive.

He tried to relax. Random muscles locked and released in his legs, his back, his neck, his eyelids. It wasn't just the after-effects of the silver cane. He'd been through too much nightmare. He was too old for this kind of thing. He had *always* been too old to play Monster And Villagers through a maze of cityscape with an armed madwoman behind him. "Come on, calm down," he whispered. "It's all over. Unless . . . " Unless there was a "Follow that car" button in Mirelly-Lyra's dashboard.

He'd still be there ahead of her. Allow, say, one minute to search the police station for a gun. Then get out.

Oops! *The booths didn't work*. He'd tried to dial the police station earlier.

The car tilted far over, rounded a corner and was on one of the radial streets. Corbell watched his rear. It was less unnerving than watching rubble come at him.

He saw the edge of the hexagonal dome go past him. The street ended. He was crossing sand. Corbell turned in time to see a stretch of beach coming at him.

The car ran straight toward the frothing white breakers, crossed them and headed out to sea at something like ninety miles per hour.

III

Corbell's voice was a rusty, querulous whine. He didn't like it. It was interfering with his search.

It said, "All right, Corbell! You won the argument. If your

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medicines were better you wouldn't have tried to steal mine. Now let's talk!"

It wasn't much of a search. He had hoped that Mirelly-Lyra might have stored food in her car. But he'd opened the glove compartment, and he'd looked under the seats, and what else *was* there? Slit the upholstery?

Corbell was hungry.

"You'll find the talking switch on the far right of the panel. Just push it upward. Corbell?"

Sure. And then you'll track me down and—But Corbell was tempted. He could ask her about food. He could ask her how to turn off the receiver.

The car zipped over the waves toward whatever destination its idiot brain had read from Corbell's spastic directions. Beneath the edges of a thick grey-black cloud deck, the sun and crescent Jupiter had drifted apart along the horizon. The sun was lower now, its lower edge flattened.

Something lifted out of the red sunglade. He thought it was a bottle-nosed dolphin until its size registered. It was halfway to the horizon, and lifting like a blimp released! Its head tilted just a bit, and it looked him over while it slowly settled back into the frothing red sea.

A dolphin the size of a whale. So we killed the whales off after all, he thought. And later there was an ecological niche . . .

"I must guess you're hearing me, Corbell. I'm tracking you toward the southernmost continent, toward what used to be the boys' capital city. You can't lose me from your path because you can't leave your car. Talk to me."

It seemed she was tracking him anyway. He flipped the switch up and said, "Is there any food aboard this car?"

"Hello, Corbell. If you try to steal my drugs again you will kill yourself. I've placed traps."

"Then I won't."

"Then we will be searching in seperate places. I give you a year to find the Dictator immortality. I wish I could give more, but you know my condition. If you will find the drug, I will become your woman. Otherwise I will kill you."

He laughed. "A difficult choice."

"You have not seen me when I was beautiful. I am the only woman for you, Corbell. There are no others left."

"Don't count on too much. Peerssa says I'm low on sex urge."

That upset her. "Have you never desired women, Corbell?"

"I was married for twenty-two years."

"What is married?"

"Mated. Under contract."

"Was there sex? Did you enjoy it?"

Suddenly Corbell missed Mirabelle terribly. He mourned her, not because she was dead, but because she was gone. And her other half went on and on, through a world grown more and more hallucinatory. . . .If only he could have talked it over with Mirabelle!

"In sex and in all ways, our life was purest ecstasy, as is usual in marriage," Corbell said with a flippancy he did not feel. "I'm sorry I brought it up."

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"I had to know."

Just to stick a pin in her, he said, "Has it ever occurred to you that I might not *want* the Dictator immortality? Maybe I'm content to grow old gracefully."

"You tried to steal my drugs."

"You've got me there."

"There is no grace to growing old. One year, Corbell."

"Hey, don't hang up. Have you any idea where I'm headed? I don't even know where we were."

"There is a continent that covers the South Pole. You are aimed there. As for where we were, there is a continent whose long tip points at the southernmost continent. We were nearly at the tip. I suspect your target to be the city of—" and for a moment her own voice broke through, before his resumed. "Sarash-Zillish, the capital of Earth's last civilization."

Departing Cape Horn for Antarctica, he thought. Where in Antarctica?

"What destination did you type?"

He risked telling her. "I was trying to get to the police station. What with the way my muscles were jumping around, I really don't know what I hit."

"Could you have struck the key more than four times? Five would send you to World Police Headquarters in Sarash-Zillish."

"Maybe." He laughed. "Well, it got me away from you."

"One year, Corbell."

In a year he could be dead . . . though in fact he felt pretty good. The aches, the exhaustion, the twitchies were going away. But the hunger had attained a fine cutting edge. "In an hour I'll be dead of starvation. Is there any food in this car?"

"No."

"What do I eat?"

"When you reach Sarash-Zillish, go to the park." She gave him an address for the keyboard of his taxi. "The park is untended now, but any fruits you find are edible, and most of the animals can be eaten if you can catch them."

"Okay."

"You will not find Dictator immortality there. There were never adults in Sarash-Zillish."

"Hey, Mirelly-Lyra. How long have you been looking?"

"Perhaps ten years of my life."

He was startled. "I got the impression you'd been at it for a century or so."

"I was unlucky. When the children revived me from zero-time, they told me they would search out the Dictator immortality for me. I had no choice but to believe them, but they lied."

"There was a vault in the hospital—"

She laughed. "There is a vault in every hospital in every city that remains on Earth. I have searched them all. What vaults haven't been rifled contain nothing but poisons. The medicines have decayed with time and wet heat."

"Tell me more. What did you learn about this Dictator immortality after you landed, before they locked you up?"

"Almost nothing. Only that it was there."

"Tell me. Tell me all the wrong answers so I don't have to waste my time on them."

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IV

The children had been waiting when Mirelly-Lyra descended from her spacecraft. Her first guess was that they must be the result of a State breeding program. Dignified, self-possessed, articulate, they displayed an adult wisdom she took for supernormal intelligence. Later she realised that it was the result of lifetimes of experience.

She had never seen their like.

They had never seen hers.

There were adults in the world, but they were a seperate breed. She never met them. She gathered that there were no more than a few thousand, all Dictator class by courtesy, all using the Dictator immortality. They kept themselves apart from the billions of children.

The children tried her by her own law. She gained the impression that it was a farce for their amusement. Perhaps that was paranoia. They were punctilious; they did not mock her; they did not deviate from laws seventy thousand years old. For her part, Mirelly-Lyra kept her dignity at all times, as she was at pains to inform Corbell.

They sentenced her to the zero-time jail.

* * *

"Didn't you hear anything about the interstellar colonies?"

"No, nothing."

"It figures. They must have broken away long before you landed. That's why they fired on you. Not because you were Mirelly-Lyra, but because you were from Earth."

There was a silence. Then, "I never understood that. Are you saying that the State broke apart?"

"Yeah. It took a hell of a long time, that's all. The State was a water monopoly empire." Corbell was talking half to himself now. "They tend to last forever, unless something comes in from outside and breaks them up. But there wasn't anything outside the State. The collapse had to wait till the State made its own barbarians."

Hesitantly Mirelly-Lyra said, "You talk as if you have known many kinds of State."

"I pre-date the State. I was a corpsicle, a frozen dead man. When the State was a century or so old, they . . . turned a condemned criminal into Jerome Corbell."

"Oh." Pause. "Then maybe you know more than I do. How could the State Break apart?"

"Look at it this way. First there was the State expanding through the solar system. Later, much later, there were a lot of copies of the State, one for each star, all belonging to one big State run from Earth. Then . . . well, I'm guessing. I think it was children's immortality.

"You made a big thing out of the advantages of making eleven-year-olds immortal. Okay, fine. What if the other States didn't accept children's immortality? Look at how *different* your children's State would be! The other States probably claimed they were the original State. That makes the Solar System State heretical, its citizens unbelievers."

"What would happen then? Would they stop talking to each other?"

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Corbell laughed. "Sure. Right after the war. Right after both sides tried to exterminate each other and failed. That's *got* to be the way it happened. It's inevitable."

"Why?"

"It just is."

"Then," she said slowly, "that's what happened to . . ."

"What?"

"When they took me out of zero-time there was more than one State on Earth. Maybe that was inevitable too. Let me tell you."

* * *

The children led Mirelly-Lyra to the peak of a squat silver pyramid. Widgets of silver and clear plastic floated around her: three dimensional television transmitters, and weapons that affected the mind and will. They turned off the pyramid; its mirror-colored sides became black iron. They put her in an elevator and sent her down.

She joined a despondent rabble. Some tried to talk to her in gibberish. She watched the elevator rise . . . and sink again with another prisoner.

None spoke her language.

The elevator never stopped rising and falling, bringing prisoners down, rising empty. The styles of those about her were wildly different; they continued to change with every new prisoner. There was no provision for feeding the prisoners.

It became obvious: nobody had been here long enough to become hungry.

The twelfth to descend was not a prisoner. A girl of eleven dropped to just above their heads. Small machines floated around her. One, a silver wand mounted in a larger base, twitched this way and that like a nervous hound eager to be loosed. The girl was naked, and strangely decorated: transparent dragonfly wings sprang from her shoulders. She called in a sweet, peremptory, oddly accented voice, "Mirelly-Lyra Zeelashisthar, are you here?"

So Mirelly-Lyra returned to the world after perhaps a quarter of an hour of subjective time.

* * *

Her hosts were half a dozen children, all girls. The girl who had come for her, Choss, was in some ways the leader. Their social organization was complex.

Their minds were not the minds of children. They walked like the Lords of the World. They were arrogant and indulgent by turns, and Mirelly-Lyra learned to obey them. They trained her with the silver wand . . . a variant of the silver cane she carried much later.

It grated on her to think that they regarded her as a social inferior. Later she changed her mind. They regarded her as a house pet, a prized property that could do tricks.

With the children she watched shows put on by other groups of children. Some they attended live. Others were broadcast as three-dimensional illusions, like holovision sets arbitrarily large. Once they floated in interplanetary space for hours, and Mirelly-Lyra wondered at the grim intensity with which Choss's girls watched a dull and repititious planetarium show. She un-

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derstood later, during the voting.

But most of the shows were bids for prestige. Some of the bulky floating widgets that followed her around were cameras and emotional sensors. Mirelly-Lyra was another show. Because of her, the prestige of Choss's group was high.

Her medicines had retarded, but not prevented, menopause. The change in her body was a near-killing blow to Mirelly-Lyra's faith in herself. She was a trained seal, and aging. One thing kept her going. Somewhere out there was Dictator immortality.

At first she welcomed the chance to talk to the girls. But that was the trouble: Mirelly-Lyra did all the talking. Her own questions were not answered. She was expected to answer the questions the girls put to her in full; if she didn't lecture at length they became annoyed.

Then, once, she found Choss in an indulgent mood.

"Choss told me that the Dictators took care of their own medical problems," said Mirelly-Lyra. "The Dictators were ruled by the boys, who made shows with them and who saw to it that chemicals in their food kept them from having children. I think Choss was jealous that the boys would not let girls play with the Dictators. I'm telling this badly," she said suddenly. "These girls were all older than I. They were decadent aristocrats, not children."

"Yeah. I get the impression the girls and the boys stayed apart."

"Yeah, and it made things difficult for me. Boys and girls, they didn't have sex to hold them together. They were two seperate States on Earth, each with its territory and its rights. They must have been seperate for a long time. Choss said that the girls ruled the sky and the boys ruled the Dictators. I would have to go to the boys to learn of Dictator immortality."

"The girls ruled the *sky*?" It sounded like nonsense, but . . .

"Choss said so. I think it was true, Corbell. I saw them vote! But I was more concerned with the Dictator immortality. Choss promised to learn what I wanted from the boys. I was valuable to them, Corbell. They gained prestige from the stories I told and the shows they made about me." Anger crackled in the translator's voice as Mirelly-Lyra relived evil memories. "They were forever amused by what I did not know. Other groups of girls began reviving other prisoners. After many years I decided that Choss had done nothing to get me what I wanted. I would have to reach the boys."

"It figures."

"What?"

"Choss couldn't go to the boys. They'd claim you as a Dictator. Their property."

"I . . . never thought of that. I was a fool."

"Go on."

"The boys held the land masses of the southern hemisphere. They had built heated domes in the south polar continent. They held two other continents and many islands. But the girls ruled more useful land, and more power too, if they really ruled the sky. I knew that the Earth had been moved. There were times when Jupiter shone so brilliantly

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that one could see the banding and pick out the moons. I was afraid of these girls. I was trying to find a safe way to steal an aircraft, but I waited too long.

"One day Choss told me that they were tired of me, that I must go back in zero-time. I was no longer a new thing. I took a plane that night. They let me fly a long way before they brought me back on autopilot. I learned that they had made a show of my escape."

"Fun people, your girls. They put you back in the box?"

"Yes. After a long time the machinery stopped. Everything was killing-hot. We prisoners couldn't talk to each other. There was no cooperation. I saved myself—some of us lived—but it was a long time before I learned enough to feel myself safe. I had to learn what could be eaten, what foods would not spoil, how to hide from storms . . . all things you will have to learn too. I was old when I could begin searching again. For ten years I searched. Then I built my small zero-time and went into it to wait for . . . you."

"Nice try."

"When you are young again, *then* mock me!"

"I don't expect that'll happen."

"We can't give up."

Corbell laughed. "*I* can give up. I guess I damn well don't believe in your Dictators' immortality. Have you ever *seen* anyone get young?"

"No, but—"

"Do you even know what makes people get old? Fires don't burn backward, lady."

"I am not a doctor. I only know what anyone knows. Inert molecules accumulate in the cells, like . . . like silt and metabolic poisons accumulating in a great inland sea, until the sea becomes a great inland swamp. The cells become less . . . active. Some die. One day there are too few active cells living too slowly. Other inert matter accumulates to block the veins and arteries . . . but I have medicines to dissolve them."

"Cholesterol, sure. But getting the dead stuff out of a living cell without killing it would be something else again. I think you were hoaxed," said Corbell. "Choss and her friends acted like nasty children. Why not your boy lawyer too? Remember, *you* asked the girls. They didn't raise the subject."

"But *why*?"

"Oh, just to see what you'd—"

"*No*!"

"Everyone dies. Your lawyer's dead. Choss is dead. Even civilizations die. There was a civilization here that could move the Earth. Now there's nothing."

After a longish silence came the calm voice of the translating box. "There are boys where you're going. I tried to talk to them once. They know nothing of Dictator immortality."

"Do they know what happened to civilization?"

"You said it yourself. There were two States on Earth. They must have fought."

"It could have happened." War between the sexes had always seemed silly to Corbell. Too much fraternizing with the enemy, ha ha. But if sex didn't hold them together?

"The boys know nothing," she

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repeated. "Perhaps there was never Dictator immortality in the south polar continent."

"You've got a one track mind. If it ever existed, you found it in every city in the world. Used up. Rotted."

"One year, Corbell."

Might as well try it . . . "How does this sound? Let me use *your* medicines. I can travel faster and look further if I'm young and healthy."

Another long pause. Then, "Yes, that makes sense."

"I thought you'd say no." Here was his chance! But . . . "Nuts. No, I just can't risk it. You scare me too much. This way at least I get a year."

She screamed something that was not translated. The receiver went dead.

A year, he thought. *In a year I'll be dug in so deep she'll never find me at all.*

THE CHANGELINGS

I

Corbell came to the Antarctic shore in near darkness. The vanished sun had left dark red splashed across the northern horizon, and a red-on-red circle that was Jupiter's night side. To east and west he picked out tiny Jovian moons. Ahead, dark woods came down to a dark shore.

The trees came at him, spreading out.

Then the smooth ride was bouncing Brownian motion, and the car was dodging tree trunks at maniac speed. He gripped the padded bar to keep himself from bouncing around inside. He dared not close his eyes. The chase scenes through Four City should have burned away his capacity for terror, but they hadn't, they hadn't.

The old trees forced their way through a tangle of burgeoning life, vines, underbrush, big mushrooms, everything living on each other. A pair of huge birds ran screaming from the car. The car rode high, but branches slashed at its underside.

The forest thinned . . . and showed masonry half-hidden in vines. The car was already racing through Sarash-Zillish. Soil and grass and small bushes had invaded the streets. If this was Three City . . . if this was the Antarctic source of industrial activity Peerssa had sensed from orbit . . . then it was far gone.

The car was slowing. Thank *God*. It scraped slowly over crackling brush, stopped in the open, and sank. Corbell got out onto moist grass. He stretched. He looked about him.

In the darkness it was barely possible to pick out two distant curved walls of hexagonal filigree where a dome must have stood. Corbell found no sign of the great black cube, the subway station, that had been the center of every city he'd seen so far.

He was parked beside what must be World Police Headquarters: a great wall of balconies and dark windows, with a row of large circular holes at the top, holes big enough to be access ports for flying police cars.

There might be weapons in there . . .

But there was certainly food in

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the park, and Corbell was faint with hunger. With some reluctance he climbed back into the car and typed *inverted L, inverted L, nameless squiggle, delta.*

* * *

Like the woods beyond the city, the park was spreading into the streets. The car stopped over a patch of tangled vines. He stepped out into it, having precious little choice, and found himself thigh-deep in tough vines that pulled him back like a nest of snakes. He waded out.

Hunger had never done anything for Corbell's disposition. It made him irritable, unfit to live with.

A wall of greenery twice his height ended just ahead of him. On theory that there was a real wall under that tangle of vines, Corbell walked to the end, turned, and entered the park proper.

There was no obvious difference. It was as dark as the inside of a mouth. Jupiter's horizontal light couldn't reach through trees and buildings. Corbell wished for a flashlight, or a torch; but he didn't even have a match. CORBELL Mark II, bare-ass naked against the wilderness, would not be hunting prey tonight.

But fruit, now . . . these could be fruit trees. The Norn had said they were. Corbell stood beneath a tree and ran his hands through the branches. Something round bounced against his wrist.

It was pear-shaped, bigger than a pear, with thick, rough skin. He stripped some of the rind away with his teeth, bit into . . . creamy avocado flesh, milder in taste than avocado.

He ate it all. He threw away the skin and pit and felt through the branches for another.

A furry tentacle dropped familiarly around his neck.

Corbell grabbed. Sharp teeth closed between his neck and shoulder. The pain sickened him. His closing right hand slipped along fur, was stopped by a thickening . . . a head. He wrenched at it. The teeth came loose, and tentacle came loose and immediately wrapped new loops around his forearm. By starlight he saw a small snarling face. He was strangling a cat-tail.

The little beast could as easily have torn his eyes or his jugular. It was trying to bite him now. Even so, he didn't especially want to kill it . . .

He banged its head against a branch. Its grip loosened. A pitcher's fast-ball gesture flung it away. It coiled on the ground, lifted a head to study him. He was too big. It went away.

The wound was muscle tissue, and wasn't bleeding badly, but still, it hurt. Corbell sent a curse to follow the cat-tail. He found and ate two more avocados. Good enough. He went back to the car, locked himself in and went to sleep.

the first day

Corbell made his breakfast on tiny apples and apple-sized grapefruit. The cat-tails had disappeared. He sat quietly while he ate, and was rewarded. Squirrels (maybe; they moved *fast*) popped into view and vanished. A bird ran out of the

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woods, stopped short in front of him—it was as tall as his shoulder, dressed in the autumn colors of a turkey—squawked in terror and fled.

Presently he picked up a thick branch, knobbed at the end. A machete was what he really had in mind, but the club had a nice heft. He went exploring.

The park was a jungle of delights. He found fruit trees and nut trees and trees that grew fist-sized warty things whose taste he would have to try, later. Pineapples and coconut palms fought for room. String beans grew on vines that were strangling some of the trees. On a hunch Corbell pulled up some smaller plants and found fat roots: potatoes or carrots or yams, maybe. He was seeing them by reddened light; for a million years they had been adapting to that reddened light and the twelve-year Antarctic day; of course they were unrecognizable. But they might be edible, if he could cook them, if he could start a fire. Or find one.

* * *

The ground floor of World Police Headquarters was clean and empty. Corbell found no dead bodies, no guns left lying about, no uniforms. Even the desks were gone. He was disappointed. He had hoped at least to clothe himself.

He tried an elevator. It worked.

Over several hours of exploring he found that the twenty-story building was bare to the walls, from the empty hangars under the rooftop landing pad, to the wonderfully filigreed cells in the fifth through seventh floors, to the offices on the second. Nothing remained that wasn't part of the structure itself.

But the elevators worked. He kept looking.

Where desks had been he found slots for trash. He tracked them to their outlet: a metal trash can, empty. He carried it out to the car. It was the closest thing he'd found to a cooking pot. Now if he could find water . . . and fire . . .

He'd already been through the big room on the tenth floor.—There was an acre of flat surface in here: tabletop along all four sides, a big square table in the middle with bins under it, doors with shelves behind them. Now, searching more carefully, he opened long panels and found knobs under them. He turned all the knobs as far as they could go, hoping to find a heat-source: this *could* be a kitchen.

He went down to the car. He came back with a generous armful of dried grass, and the club.

Most of the kitchen mechanisms must have stopped working. A snug and solid door proclaimed a cupboard to be a refrigerator. Some of the flat surface had to be griddles; but they weren't hot. A small glass door with a shelved recess behind it *was* hot. An oven. Corbell stuffed the grass into it, and waited . . . and waited . . . while the grass smoldered . . . smoldered more . . . and, suddenly, burned. He opened the door and set the club in the burning grass. When the grass burned out the knob on the end was barely smoldering. By then Corbell had found an exhaust fan. He let that blow on the coals until he had a small flame.

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* * *

The rain started as he reached the car.

The car refused to move unless the doors were closed . . . with the club inside with Corbell, smoldering. The small flame had gone out. The rain fell tremendously, as if it would never stop until the world was all water. Smoke inside and rain outside: Corbell couldn't see at all.

Fortunately the ride was short. The car settled over the exact same patch of tangle vines. Corbell pushed the trash can out into the rain, but he stayed in the car, blowing on the coals, with the doors open.

The afternoon rain went on and on. When the club stopped smoldering Corbell didn't care. All the wood in the park would be soaked by now. He waded out into the wet and got his dinner of assorted fruits before the light was quite gone.

Again he slept in the car. A cramped, damp, wakeful night followed a miserable day. In this jungle of delights, this wilderness in which everything that grew seemed intended to serve man, Corbell had failed to make fire even with the help of a kitchen oven. Robinson Crusoe would have sneered.

But the cat-tail bite was healing. No fever: he had escaped rabies and tetanus.

Tomorrow. Try again tomorrow.

the second day

—was bigger, better, faster. He took the car to World Police Headquarters. He carried two armfuls of damp scavenged wood into an elevator and up to the kitchen. He put them in the oven. He'd forgotten to turn it off yesterday; it saved him time now. He turned on the exhaust and left.

A little searching found him a second trash can. He took it up. The logs were smoldering, burning in places, but still wet. He left them to it. The kitchen was full of smoke, despite the exhaust fan.

Impatience got to him. There were not even flames on the blackened logs now. He opened the oven door, letting in air. The gasses caught with a soft *whoosh*. Corbell leapt back slapping at his hair and eyebrows; but no, they hadn't caught.

He had to tear a door off a narrow cupboard. It was the only tool he could find. With the door he harried the logs out of the oven and into the trash can. He took the cupboard door along too. Flat metal, it might serve somehow.

His way back to the park was slower. Three times he had to open a door to let out the smoke; each time the car slowed as if it had rammed invisible taffy. But he got back, and maneuvered the trash can out of the car into the patch of vines, under a threatening sky. The logs had gone to coals.

He turned the can on its side and braced the bottom higher than the lip. He pushed the coals into a pile at the back. He found more wood, not too damp, which he set in the trash can to be dried by the heat. When the warm rain opened up on him it didn't bother him. It was not especially uncomfortable, and now his fire was safe.

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This time a million years ago . . . this time two million years ago . . . Corbell the spaceman had already crossed tens of thousands of light years, and at the core of the galaxy was skirting the edge of a black hole massive as a hundred million suns . . .

Corbell the naked savage went forth to hunt his dinner.

Living things rustled around him, but he saw nothing. It didn't matter. He didn't have anything to kill with, not so much as a kitchen knife. He kept his eyes open for another club while he pulled up roots. He pulled up quite a number of different roots. He'd roast them all, and taste them.

He spent more time gathering nuts. The rain stopped. This rain seemed regular enough: starting just after noon, lasting two or three hours. It was nice to be able to count on something. In the customary red sunset light he sat down to cook his dinner.

He had to throw away half the roots. He got, in rough and approximate terms, one potato, one very large beet, a combination yam and carrot, and a more nearly pure yam. He burned most of the nuts, but some survived; and were delicious. He went back for more.

Then night was upon him. He set the trash can upright and set some fallen tree limbs upright on the coals, and settled down to sleep in a patch of nearly dry moss.

the third day

Corbell half-woke in darkness. He felt fur and a warm spot against his back, but elsewhere he was chilled. He curled more tightly around himself and went back to sleep.

Some time later the memory snapped him awake. *Fur?* There was nothing against his back now. A dream? Or had a friendly cat-tail stretched against him for warmth? The touch hadn't wakened him fully. He and Mirabelle used to share their king-sized bed with a kitten, until the kitten became a tomcat and started behaving like one.

Well, he was awake now. He did easy exercises until the stiffness was gone. He breakfasted on fruit; what else? Perhaps he ought to be looking for nests, and eggs.

The fire was still going. He built it up with twigs, then went looking for larger pieces. He wished for an ax. The little stuff burned too fast, the big stuff was too heavy to move, and he would soon use up all the dead limbs in the area. He spent part of the morning dragging a huge limb to his replenished fire. After he had tilted the trash can on its side and pushed the big end of the limb into it, he decided he'd created a fire hazard. He moved the whole arrangement onto a nearly buried outcropping of granite.

It was meat he hungered for. If he could find a straight sapling perhaps he could fire-harden it into a spear . . . if he could sharpen a point. What he really needed was a knife, he thought. For that alone it was worth exploring Sarash-Zillish.

* * *

Four crossed-commas brought the car to the Sarash-Zillish Hospital. Corbell recognised it at once. From outside it was identical to the Four City Hospital.

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Civilization must have become awfully stereotyped before its collapse. Corbell fantasized a great pogrom in which all the world's architects had died. Afterward humanity had been reduced to copying older buildings detail for detail . . . It didn't make a lot of sense. He'd look for other reasons for the duplication he saw everywhere.

Inside, the place kept reminding him of his nightmare flight from Mirelly-Lyra. Clean corridors, doors with no handles, cloud-rug . . . The only difference was the lack of a vault. He found a central place, a two-story room lined with shelves and occupied by a computer that must be diagnostic equipment. But there was no vault door and no double "phone booth". No precautions against thieves. No mummified losers.

If Mirelly-Lyra had not lied, the "boys" had owned this city. They would not have needed to steal Dictator immortality. Only Dictators—adults—would need that.

He found more locked doors . . . that would open with a kick. He found an operating room: two flat tables with straps attached, and clusters of jointed arms above them, tipped with scalpels and suction tubes and needles and clamps. The metal showed the stains of neglect and age.

That stiffly extended insectile arm: that was his target. Corbell climbed up on a table, leaned out to grip the arm at its end. He swung outward and hung suspended. The arm sagged, then broke in the middle and dropped him to the floor.

Corbell the hunter left the hospital carrying three feet of metal spear with a scalpel at the end.

* * *

Again the rains caught him on the way back. He made his way to his fireplace, checked to see that the fire was still going, then sat down to wait it out. There were several inches of water in his other trash barrel.

He was killing time by trying to shave—very carefully, but the weight of the handle was awkward and he wasn't doing a good job of it—when he saw the giant turkey. It was pecking under a nut tree, looking bedraggled and unhappy. He froze. It hadn't seen him. He debated as to whether he might sneak up on it. Probably not.

He eased forward onto the balls of his feet, spear held lightly in both hands.

He sprinted. The bird looked up, squawked, turned and fled. Corbell swung the spear and chopped at its foot. The bird stopped to peck at whatever had bitten it. Corbell chopped again, at the neck, and felt the satisfying shock in his shoulders.

The bird was hurt and in panic. It ran in clumsy circles, squawking, while Corbell chased it. He got two more shots at the neck, and then he had to stop, gasping, his pulse thundering in his ears. The bird was spouting blood. It hadn't slowed down, but its flight was Brownian motion, sheer blind panic.

It had not gone far when Corbell recovered his breath and resumed the chase. He was moving in for the kill when the bird turned and ran

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straight at him. A lucky swing as he sprawled backward, and the bird was headless. It ran right over him and kept going.

He tracked it until it fell over.

The patch of bare rock was nearly dry. Corbell spilled his fire across it, added more wood, then went back for the bird. He pulled feathers until he was exhausted, rested, pulled more feathers. He opened the bird's belly and cleaned it, tugging two-handed at internal organs, his feet braced on rough rock.

The cupboard door from the police station became his griddle. He fried the liver on it, and ate it while parts of the rest of the bird were roasting. Afterward he worked at cutting into the joints. He couldn't build his fire big enough to roast the whole bird, but he could roast a drumstick. And broil thick slices of breast on a stick.

Meat! It was good to taste meat again. There was far too much to use tonight. He had roasted both drumsticks; he could eat them cold tomorrow. He could cut up parts of the carcass and boil them for soup, in the other trash can, with some of the roots.

But for tonight he'd had enough.

II

The northeast was turning gray, but in the black northwestern sky one star still glowed. Corbell had watched it on several nights. It did not twinkle and it did not move against the stellar background. That made it a planet, a big object dimly lit, possibly the world whose skewed orbit had disturbed Peerssa.

Now it twinkled; now it was marginally brighter. Corbell blinked. Just his imagination? Now it was fading before the coming dawn . . . Corbell closed his eyes. He didn't want to wake up. There was no special reason why he should. He wasn't hungry or uncomfortable.

He'd learned much about the empty city during these past twenty days, but there were mysteries still to be explored. His encampment had become comfortable. He had a fireplace, a soup pot, and the car for shelter. He had tools: he had used the scalpel to carve wooden cooking implements. He didn't need clothes. For two full days he had practiced throwing rocks, and taken his reward in squirrel meat. Yesterday he had killed another giant turkey, his third.

Big deal.

Obscurely depressed, he curled tighter in his bed of moss.

Corbell the architect and Corbell the interstellar explorer seemed equally dead. In his pride he had called himself a naked savage, but he wasn't that. A savage has his duties to the tribe, his tribe's duties to him. He has legends, songs, dances, rules of conduct, permitted and unpermitted women, a place for him when he grows old . . . but Corbell was an outcast. He could make fire—with the help of a supersophisticated kitchen. He could feed himself—now that practically everything he could touch was edible.

Some park. In the beginning it must have held only food plants and meat animals. City surrounding a farm. The cat-tails could hardly

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have survived, vain and decorative though they were, in the presence of *real* predators.

Domed cities. Mirelly-Lyra had spoken of the Boys having built domed cities, here in land the more powerful Girls hadn't held. But of course: Sarash-Zillish must have been domed against blizzards and subzero cold, before the world turned unaccountably hot. As for the "park", the Boys could hardly have grown beans and citrus fruit in the permafrost outside.

The Girls ruled the sky . . . . controlled Earth's orbit. They must have made a mistake somewhere. What could have turned Jupiter into a minor sun? It must have shocked the Girls as badly as it later shocked Peerssa. It must have; because the change left Boy territory habitable and made Girl territory into scalding deserts, overturning a balance of power tens or hundreds of thousands of years old.

Corbell shifted, then sat up. It was the present that ought to concern him . . .

. . . Three cat-tails were tearing at his turkey carcass. When he moved they jolted to attention. Corbell reconsidered his first intention. They were eating the raw meat; they had left the roasted drumsticks alone. There was plenty of meat left for Corbell.

They studied him: three snakes with solemn cat faces, furred in brown and orange intricately patterned; as beautiful as three butterscotch sundaes. Corbell smiled and gestured hospitably. As if they understood, they went back to their meal.

Breakfast: he ate fruit and drumstick meat and thought about coffee. Afterward he tended his fire. The scalpel was razor-sharp despite age and eighteen days of use, but it was no ax. He went far afield to find wood. The exercise was good. Decades in the cold sleep coffin had preserved him better than he had hoped; he'd gone soft despite the exercises, but the savage life was toning him up. He took the other trash can to what had been a fountain and was now a pond, filled it with not especially clean water, dragged it back and wrestled it into place on the fire.

He turned to the turkey carcass. He cut chunks small enough to fit the trash can. Meat gnawed by cat-tails went in, and so did bare bones. While it heated he foraged for roots to flavor the soup. Potatoes. Carrot-yams. He'd found nothing that resembled an onion, unfortunately. He added beans and, experimentally, a couple of grapefruit. He stirred it all with a wooden paddle.

As usual, noon looked like sunset, endlessly disconcerting. Corbell rested. The water was beginning to bubble. Granite was uncomfortable beneath his buttocks. Corbell was mildly depressed, and he couldn't understand why . . .

And then he did.

Last day of a camping trip. You've worked your tail off; your belt has come in a notch and a half; you haven't had to think much; you've seen some magnificent scenery; there were damn few people on the trails, and they didn't rub your nerves. It's been good. But now it's back to work—

Mirelly-Lyra knew where he was.

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He was healthier than he'd known. He could live a Jovian year, if nothing killed him; the tourist in him liked that thought. The mad old woman had promised him one year, an Olde Earth year. He could believe as much of that as he cared to, but a sane man would choose the jungle.

Could a man survive in the jungle outside Sarash-Zillish? It would depend. Corbell had come to Antarctica in either spring or fall of a year twelve years long. An Olde Earth year from now the day might last twenty-three hours, or one. It would be much warmer than this, or much colder.

For the world still had its tilt and its twenty-four-hour rotation. Odd that the Girls had not corrected that . . . but maybe they were traditionalists. Much odder that they had not moved Earth out from the growing heat of Jupiter. What concerned Corbell was this: he could not take a world twenty degrees colder, not without clothing, and endless night might drive him mad.

Soup odors were beginning to permeate the wood smoke.

This sense of urgency was silly. He had a year to get moving. He could make foraging expeditions to the edge of the city. Keep his camp here. Whatever was out beyond the domes had had to be imported. How dangerous could it be? It might well be thousands of square miles of Sarash-Zillish Park.

An endless vacation. And he could use it. In his second life CORBELL Mark II had suffered enough future shock to kill a whole cityful of Tofflers.

Tomorrow, then. He could take the car as far as the hospital; it was near a standing fragment of dome. Then into the wild with spear and drumstick over either shoulder, if the drumstick kept that long without refrigeration.

He remembered to scrape some of his fire into his trash can fireplace. He stretched out on the warm granite . . .

* * *

Warm rain hammered at him. He turned over fast, rose to hands and knees and coughed out a tablespoonful of rainwater. First time *that* had happened. His bonfire must be out, but had the soup cooked first? Was rain getting into his fireplace?

He looked up, and forgot all of these crucial questions.

A dozen or so boys—approximately a big boy scout troop, but uniformed only in breechclouts—squatted in a circle around Corbell and his fire. They were passing around a drumstick bone, nearly clean by now, while they watched him. As if they had been watching him in perfect silence for hours.

Their hair was rich where they had hair. On some it was black and wooly, on others black and straight, dripping to their shoulders. The crowns of their heads were bald but for a single tuft on each forehead. They ignored the pounding rain and watched, half-smiling.

"I should have known," said Corbell. "The cat-tails. They're half tame. All right." He made a sweeping gesture. "Welcome to the Kingdom of Corbell-for-himself. Have some soup."

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They frowned, all of them. One got up: a long, lanky boy, a budding basketball player, Corbell would have judged. He spoke.

"Sorry," said Corbell.

The boy spoke again. Command and anger: that was no boy's voice, though it was high-pitched. Corbell was hardly surprised. These were the Boys, Mirelly-Lyra's immortals.

"I don't speak your language," Corbell said slowly, with an instinct that went against sense: the natives will understand if you speak slowly and clearly.

The boy came forward and slapped him across the face.

Corbell hit him flush in the mouth. His right cross hit ribs instead of solar plexus, and the following left missed completely, somehow. Then the whole circle converged on him.

His memory thereafter was a little hazy. There was weight on his knees and forearms. Granite ground into his back. The basketball star sat on his chest and spoke the same sentence over and over through a split lip. He would say it, and wait, and slap Corbell twice, and say it again. Corbell replied with obscenities. He could feel the bruises now; they hurt sufficiently.

The tall boy got off his chest. He said something to the others. They all frowned down at Corbell. They discussed the matter in complex consonants spat like mouthfuls of watermelon seeds.

Corbell's head still rang; it had been beaten against granite. Four boys were still sitting on his forearms and knees. Rain splashed in his eyes. It all tended to muddle his thinking.

Did they think he was a strayed Dictator? But Corbell was showing his age. They couldn't—Wrong. No Dictator immortality here. The Dictators must grow old as Corbell had grown old.

The discussion ended. Four boys got off Corbell. He sat up rubbing his arms. One took a theatrical pose, pointed at the ground before him, and spat one harsh word. *Stay!* or *Heel!* His message was plain, and Corbell was in no shape to run.

The tall boy still studied Corbell as if trying to make up his mind. The others clustered around Corbell's soup pot. They scooped soup into halves of coconut shells. The tall boy finally offered him something else, a ceramic cup from his belt. Corbell waited for room, then moved in.

He sat (gingerly, favoring the bruises) and drank. Cat-tails moved among the tribe like a plague of snakes; rubbed against ankles, and were petted; tore at the raw turkey carcass, what was left of it. Corbell felt fur against his ankle. He stroked a pure black cat-tail. A rumbling vibration went through his shin.

Shall we say that Corbell has been captured again? Or, Corbell asked himself, *shall we say that Fate has given me guides through Antarctica?* Put that way, the decision was easy . . .

III

The soloist sang in a strong, rich tenor. He sang to background music: eight Boys humming in at least four parts, one more beating with turkey bones on Corbell's trash can

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fireplace. Alien music, improvised, overly complex against the simple melancholy tune.

Corbell listened open-mouthed, the back of his neck tingling. He had feared this, and it was true: three million years had increased human intelligence.

"Oh, we got a new computer, but it's quite a disappointment," Ktollisp sang, *" 'cause it always gives this same insane advice: Oh, you need little teeny eyes for reading little teeny print like you need little teeny hands for milking mice!"* The flavor of mockery in his singing was for Corbell. He couldn't know what the words meant. But his pronunciation was accurate.

Corbell had sung that song *once*.

He had taken to singing in an effort to enhance his entertainment value. He sang medleys of advertising jingles, or the clean and dirty folk songs he and Mirabelle had sung on the boat. The Boys liked it. They didn't like it when he repeated a song they'd heard before. He had wondered why.

Beside him was the boy who had attacked him that night a week ago, the leader in some respects. Skatholtz was broad of nose and lip, wooly-haired, long-limbed and emaciated-looking. He might have been a black pre-teen, but for the partial baldness and the prison pallor he shared with the others. He said in English, "He sings well, do you think?" and laughed at what he found in Corbell's face. "Now you know."

"You remember everything. Everything! Even whole songs in another language!"

"Yes. You need to learn my speaking more than I need to learn your speaking, but I learn yours first. This is why. You are different, Corbell. Older. I think you are older than anything."

"Almost anything."

"I will teach you how to talk. When you tell your tale, we all want to listen. I make a mistake with you. Do you know why I hit you? We thought you are only a dikt who broke with rules. You did not—" Skatholtz jumped suddenly to his feet. He stood at parade rest for a moment; then he shrank back, hands raised half in supplication, half to ward a blow.

"I didn't cringe," said Corbell.

"Yes, cringe. It is a formal show of respect."

Ktollisp sang, *"So we got an expert genius and he rewrote all the programs, but we always got results that looked like these: Oh you need little teeny eyes for reading teeny print like you need little teeny license plates for bees!"*

It was pink-and-black dusk in the park. The Boys had returned early this day. They spent most of every day in Sarash-Zillish, going through buildings like a flock of wild birds. Exploring, Corbell had thought. Savages swarming through ruins they could not understand.

He'd soon lost *that* illusion. A pair of Boys had escorted him outside the hospital operating room while the others worked inside. When he was allowed back in, Corbell's scalpel-spear had been reattached. The many-jointed arms above the operating table were carefully carving a phantom patient.

He was not allowed to watch repairs, but he had seen the results.

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The refrigerator in the police building, restored. A factory tested, run through its cycle until it had built two "phone booths". The Boys did Corbell the signal honor of letting him test the booths. He had not tried to balk. Another factory had produced a Bathroom, a complete unit with pool and sauna. The Boys had repaired and tested the city lighting. Now the sides of many buildings glowed with soft yellow-white light. Others remained dark. The effect was eerie: a city-sized chessboard.

They lived like savages, but apparently it was from choice.

In camp Corbell had done his share of the work, hauling firewood and digging up roots. They had given him a loincloth, but they would not give him a knife to replace his scalpel-spear. He still didn't know what place he held among them. He feared the worst. They were too intelligent. They would see him as a lesser being, an animal.

He needed them. It wasn't just company he needed. He could not travel safely until he knew something about this new continent.

The boy was singing all the verses, to the muted laughter of his companions. Corbell said, "Sooner or later I'll run out of songs. Sooner."

Skatholtz shrugged. "It is all the same. We leave here when light comes again. We go to other . . . tribes? To tell them that Sarash-Zillish is ready for the long night. You come with us."

"Night? Is it night that's coming?" Had he landed in autumn, then?

"Yes. So you came from space, unready! I thought that. Yes, the long day is ended and the short day-nights are with us and the long night comes near. In the long night we live in the city. Hunters go to the forests around, and food will keep in the cold boxes. In day we live more as we like."

"What's it like out there?"

"You will see." Skatholtz picked up a passing cat-tail and stroked its fur. "We have time to teach you some speaking," he said, and he switched to the language Corbell had tagged Boyish. Corbell was agreeable. He enjoyed language lessons.

* * *

Morning: they moved out. There was incredibly little fuss. They all seemed to wake at once. Soup had been simmering all night, made to Corbell's recipe, which they liked. Breakfast was soup in coconut shells. They picked up pots, cloth, the fire starter, half a dozen edged weapons. One, an albino with pink eyes and cottony golden hair, handed Corbell twenty pounds of jerked meat wrapped in cloth. They left.

Marching awakened Corbell fully. He had to drive himself to keep up, though the Boys made no attempt to set a steady pace. They ambled. Some dodged into buildings, then jogged to rejoin the tribe.

Savages they were not. They carried an idiosyncratic variety of edged tools, no two alike: scimitars, machetes, sabres, shapes that had no name, all with carefully sculpted handles. They had made the jerky

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the way Corbell would have, in an oven set on *Low*. The cloth they carried was indestructible stuff as thin as fine silk. Krayhayft's flashlight/fire starter projected light of variable intensity, in a conical beam or a beam no thicker than a pencil.

Organized they were not. But they had broken camp in minutes!

They tramped through silent streets. Ingrowths of jungle grew thicker about them, until the city became jungle. They passed a straight tree trunk that Corbell suddenly realized was vine-wrapped metal. He looked up to see where it joined other members in a hexagonal array: a part of the old dome.

The jungle bore fruit: small oranges, breadfruit, several kinds of nuts. The Boys ate as they walked, and picked raw nuts to replace the roasted nuts they carried. They talked among themselves. Corbell couldn't follow their speech; it went too fast.

He strode along in their midst, keeping the pace he'd set himself. Incredible, the way his old body had healed! Tomorrow the aches would come; tomorrow he might not be able to move, except he'd damn well better. Today he felt fine. He felt like a scout-master leading his troop. *Memo: Don't test your authority*.

Three hours or so into the hike . . . and that could almost be a fight developing up ahead. Skatholtz and another Boy were spitting syllables at each other with unwonted vehemence.

Last night's singer loped to join them. Ktollisp was a burly, big-chested Boy with Skatholtz's black man's features and everybody's pale skin. He snapped one word at the two and they shut up.

Ktollisp looked about him; frowned; pointed. The troop went off in that direction. They found a clearing, a few bushes growing on otherwise bare ground. Corbell watched, not understanding, as the troop formed a circle and Skatholtz and the other Boy stepped into it.

What was this, a duel? The two dropped their knives and breechclouts (no pubic hair). They circled like wrestlers. The challenger kicked at Skatholtz's heart. Skatholtz swerved clear . . . and now it was happening too fast to follow. Fists and feet and elbows struck to kill: a momentary hold broken by an elbow between the eyes, the challenger kicked off balance and handspringing clear; Skatholtz jumping full over a bush and then using it as a shield. It looked like a damned dance! But Skatholtz was favoring one leg, and the other Boy was circling faster. He was going to run him down.

He caught a kick in the face as he closed. Skatholtz moved in for the kill.

Ktollisp barked one word.

The bloody-nosed Boy cringed before Skatholtz, held the pose a moment, then straightened.

Everyone got up and started moving again. Someone else was carrying Skatholtz's cumbersome pack of cloth. His opponent was grinning and wiping at a bloody nose.

* * *

In midafternoon Skatholtz said two words Corbell recognized. He said, "Stop talk."

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They did. Now the silence of their march was uncanny.

Skatholtz dropped back to walk beside Corbell. Very quietly he said, in Boyish, "You walk too loudly."

"I can't help it. Are we hiding from something?"

"From dinner we hide. Earlier was too early. We did not want to carry food so far. If something moves, let me know."

Corbell nodded. He didn't expect to see anything. It would be months before his brain could train his eyes to see what the Boys could see in familiar territory. The keen-eyed Indian sees things the white man can't, but only in his own environment.

Two boys transferred their loads to others and slipped away. Corbell couldn't see where they had gone . . . but presently there was a weird and terrifying sound, like a clarinet screaming for help. Every boy instantly moved off the trail to flatten against a tree. Corbell copied them.

The tortured clarinet sounded nearer. They heard breaking wood. What would emerge? A tentacled monster, descendant of aliens enslaved by a younger, space-travelling State?

The monster burst from the trees. It was crippled, its forelegs running blood, hamstrung. The boys followed it, first the hunters and then the rest, slashing at its hind legs.

A baby elephant!

Corbell caught up in time to see the death. It was murder; it left him sick to his stomach. He fought his squeamishness and moved close to examine the corpse. The beast was wrinkled and marked by old scars. No baby, this. It was an adult elephant four feet tall at the shoulder.

He asked Skatholtz, "Can I help?"

"You may not butcher. I can not let you touch a knife. You are not a dikt, Corbell. You are nothing we know."

"Today I kill nobody." He meant it as a joke, but he didn't know enough Boyish to phrase it that way.

Skatholtz said, "And tomorrow? I think you make fiction-to-entertain, but lives might end if I am wrong. Do you understand my speech?"

"I will learn." He knew that Skatholtz was using baby-talk for his benefit.

"Do you know the *chkint*?"

"*Elephant*. When I was young they were bigger, higher than your head at the shoulder." He wondered how elephants had come to Antarctica. Not as meat animals, surely. Maybe there had been a zoo . . .

Skatholtz looked dubious. "There are larger beasts in the sea, but how could such a beast live on land, without support? Still . . . I have wondered why the *elephant's* legs are so thick. Was it to support larger weight?"

"Yes. The legs were more thick when I was young. The beast was the biggest on land. Five million years ago—" he had divided by twelve, for Jupiter years—"there were beasts far larger. We have found the bones turned to rock in the earth."

Skatholtz laughed skeptically and left him.

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Having finished butchering the elephant, they departed. Corbell carried a rack of ribs for awhile, but it slowed him down. A disgusted tribesman finally took it away from him.

The forest ended.

Far across a prairie of waving yellowish-red vegetation, Corbell saw a last sliver of the departing sun. Jupiter was a pinkish-white disk, rising.

Here they made camp. Presently Corbell ate roasted elephant for the first time in his life. He was too tired to sing for his supper. Someone was telling a story—it was Krayhayft, who had oriental eyes and white patches gleaming in his straight black hair—and the others were listening in intense concentration, when Corbell dropped off to sleep.

* * *

They tramped all the next day through waving pinkish-yellow grain. Corbell judged it wheat. "Who grows this?" he asked Skatholtz, and was answered with laughter.

Wheat took cultivation, didn't it? Maybe it had been gene-altered. Four gene-altered cats still lived among the tribe; they took their turns riding the necks of various tribesmen. A wheat that grew wild would be worth having: more useful than a cat that was all tail.

All day Corbell saw kangaroos and ostriches bounding through the wheat. They were fast and wary. Late in the day Krayhayft found the tracks of something larger. The tribe followed. Near sunset their quarry came in sight: a big, shambling mass that ran from them on four legs until it turned at bay on two.

It was a bear. Its skin was hairless and yellow but for a mane of thick white fur. A nude polar bear? And no dwarf, either. It waddled toward the hunters and tried to maul them with its great claws.

It was fighting *Homo superior* in the prime of health and youth. They danced around it, slashing. It fought on long after it should have bled to death.

They ate bear meat that night, while the cat-tails hunted at the edge of firelight. Jupiter was full, banded and orange.

Corbell was dozing with a full belly when Ktollisp dropped beside him. He spoke slowly, enunciating. "Do you sing tonight?"

"If I choose, then no."

"Acceptable. What was this about growing grain?"

"The grain we used didn't grow without human help."

"Like Skatholtz, I do not read your face well. If this is fiction-for-entertainment, you do it well. We will be sorry to lose you."

"How do you lose me?" The boy might mean only that dikta die sooner or later, like cat-tails.

No: Ktollisp said, "When we reach the dikta, we lose you."

Corbell hadn't counted on that. "How many days?"

"Four. Five if we stop for amusement somewhere. You will like the dikta, Corbell. There are men and women and the making of new Boys between them. They have a city and some country around, but they are not smart enough to make the machines go. In day we fix the

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things that go wrong at night."

"They're not smart enough? They are the same . . . kind you are. Their heads should be built the same."

"They have the *brain*, the stuff inside the heads, just like us. They do not have the time. We do not tell them how to fix machines. They do not live long enough to learn, and they might break the machines learning, and we punish them if they leave. So they stay in the dikta place. They need us. We know where to find them. We must know this because we must bring new boys to the tribes."

"What happens to the . . . small ones not boys?"

"The *girls*? They grow. Some boys grow too. We choose the best, the smartest and the strongest, one from each tribe for each year, and we send them back to the dikta. We do not do the thing to them that makes them stay the same forever."

Planned breeding for superior boys . . . and it would tend to cow the young Turks, to the benefit of the leaders. Corbell said, "There must be a lot more women than men."

Ktollisp grinned. "You like that?"

Anger tied his tongue. "You—you joke! I die of being too old soon! I can't make more boys!"

Ktollisp had Corbell by the hair, his knife was drawn, before Corbell could do more than gasp. He slashed—

—slashed away a thick handful of Corbell's hair and held it before his eyes. "Your lies are for the newly born. We are offended," he said. "Can you lie as to this?" The thin white hair he held in firelight was dark brown for half an inch at the roots.

Corbell gaped.

The tribe surrounded him. They must have been listening all the time. Yes, they looked offended. Skatholtz said, "No dikt grows hair like that. You have found the dikta way to live long like Boys, that we know only in tales. We must know what and where it is."

Corbell had forgotten his Boyish, every word. In English he cried, "I haven't the remotest idea!"

Ktollisp slapped him.

Corbell tried to block with his arms. "Wait, wait. You're right, I *must* have taken dikta immortality. I just don't know where. Maybe, maybe it's in something I ate. The dikta did a lot of gene engineering. They made the cat-tails and the wild wheat. Maybe they made something that grows dikta immortality, something that grows in Sarash-Zillish. Listen, I didn't know it was happening! I can't see my own hair!"

Skatholtz was gesturing the rest back. "You could not feel your youth returning?"

"I thought I was . . . getting adapted to the rough life. I spent like a hundred and thirty years in a cold-sleep tank, ten years at a time . . . my years, not yours. I couldn't know what it did to me. Listen, there's an old woman who's been searching every city in the *world* for dikta immortality. If *she* doesn't know, how could I?"

"We know nothing of this woman. All right, Corbell. Tell your story. Leave nothing out."

He had been sleepy. Now he was scared boneless . . . and still

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bone-weary . . . and in that state Corbell told his life's story. Whenever he paused for breath Skatholtz spat complex phrases in Boyish, translating.

Telling savages about a black hole at the center of a galaxy was easier than he had expected. Telling Mirelly-Lyra's tale was wearing. They kept backing him up for points she hadn't mentioned, for points she hadn't even noticed in her thirst for Dictator immortality. They found her lack of curiosity incomprehensible.

Questions. What had he eaten? Drunk? Breathed? Could immortality have been in the Bath in One City? It was a mistake to mention the Fountain of Youth . . . but no, the dikta themselves used Baths . . .

Dawn came and Corbell was still talking. "It could have been any of the things I tried. The fruits, the nuts, the roots, the meat. The soup, even; I mean the combination of a lot of things plus the heat. Hell, it could even be the water in the fountain."

Skatholtz stood and stretched. "We can find out. When we return to Sarash-Zillish we will take a dikt. Shall we go?"

"Go?" Corbell saw that the other Boys were getting up, collecting gear. "Oh, please! I'll fall over!"

"You are stronger than you think, Corbell. No longer are you a dikt sick with age."

They marched.

The wheat-covered prairie went on forever.

They camped early, after the afternoon rain. Corbell sprawled in the wet earth and slept like a dead man.

IV

He woke early. A cat-tail had crawled along his ribs, liking the warmth, tickling him. It mewed in protest as he rolled away. There was more protest from his overused muscles.

The fire had died. Jupiter, white with a thin red crescent edge, made the night seem bright.

Well, I'm in trouble again, he thought. *Imagine my amazement. Everyone in the world wants Dictator immortality, and they all think I've got it, and they're all half right. Why do the Boys want it? Maybe they want to destroy it. It's the biggest difference between them and the dikta . . .*

He let his hand stroke the orange cat-tail. It draped itself over his knee and rumbled contentedly.

What is it? If it's edible it's in Sarash-Zillish. Everything I ate in Four City, Mirelly-Lyra ate too. One kind for women and one for men? and man's immortality doesn't affect women at all? I don't believe it.

So something in the park holds Dictator immortality, in the sap or the juice or the blood, and I ate it. What did she eat when she searched Sarash-Zillish? The Boys eat almost no vegetables . . . and vegetarians eat no meat . . . but she fed me both, and fruit too. Insects? I *don't eat insects.*

If I could get her to Sarash-Zillish, I'd know. Watch her. See what she doesn't eat.

The stars were bright tonight. A few unwinking stars had a pinkish tinge: small Jovian moons. The

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boys were sprawled far from where the fire had been. A boy on guard looked around as Corbell sat up. It was Krayhayft, the only Boy with white in his hair.

Heady smells reached Corbell. Wet earth and growing things, traces of young supermen who hadn't washed recently, a ghost of broiled meat that Corbell hadn't shared: suddenly he was hungry. And suddenly he was elated.

"What the hell am I complaining about?" he whispered. The cat-tail stopped purring to listen. "I'm young! If nothing else works I can outrun the bitch! I should be dancing in the streets, if I could find a street."

Young again! That made twice. If he could find out how he did it, he could stay young for the rest of his life. Everybody's dream. And even if he couldn't . . . the grin died on his face. Now he had fifty years to protect, half a century of lifespan that the Norn would rip from him if he couldn't show her the Tree of Life in Sarash-Zillish.

Something that tasted funny? Everything tasted funny. Different soil. Three million years of change.

It was too damn simple anyway. Immortality? And you drink it like fruit juice? An injection might have been more plausible, if he had recieved any kind of injection. Or . . . had he inhaled it like marijuana, in the smoke from the wood of a carefully genetailored tree?

"Corbell. Do you enjoy the morning?"

Corbell jumped violently. The sentry's approach had been perfectly silent. He settled beside Corbell. By Jupiter light the pale threads gleamed in his hair. Corbell had wondered at the grace with which he moved: Krayhayft who carried the fire starter, Krayhayft the story teller.

"How old are you?"

"Twenty-one," said Krayhayft.

"That's old," said Corbell. *Jupiter years*. "I wonder why you aren't the leader."

"The old ones learn to avoid that chore . . . and to avoid the fighting that goes with it. Skatholtz can beat me. Skill in fighting has an upper limit. One is born with one's greatest possible strength."

"Oh."

"Corbell, I think I have found your spacecraft."

"What?"

"There." The boy was pointing low on the northern horizon, where a few stars glowed in the grey-black of coming dawn. One showed pink among blue-tinged stars. "The one that might be a moon except that it does not move. Is that your spacecraft?"

"No. I don't know where my ship went. *Don Juan* wasn't ball-like. It would look more like a thick spear."

Krayhayft was more puzzled than disappointed. "Then what is it? I have seen it twinkle oddly. It does not move, but it grows more bright every night."

"The whole system of worlds is messed up. I can't explain it. I think that's the next world out from Jupiter."

"I wish it had been your spacecraft," said Krayhayft. He fell to studying the steady point of light. Entranced . . .

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The cat-tail slithered from Corbell's knee and disappeared into the grain. Corbell saw two more low shadows slipping after it.

A cat screamed. Simultaneously something much bigger vented a much lower, coughing roar. Krayhayft shouted, "Alert!"

It bounded out of the grain and leapt at Corbell's throat: something as big as the biggest of dogs. Corbell threw himself to the side. He saw a spear plant itself solidly in the open mouth, and then the Boys were on it. It was a dwarf lion, male, magnificently maned. It died fast. Even the first spear might have killed it.

Corbell got up, shaken. "The female could be out there."

Skatholtz said, "Yes," and joined the others who were fanning out into the grain. Corbell, spearless and superfluous, stayed where he was.

Presently he noticed something small in the path the lion's charge had left through grain. He found a small butterscotch-sundae-colored corpse. The other cat-tails had returned to the fire. They seemed unusually subdued.

* * *

At Dawn he helped two Boys build a fire. He saw the reason later, when four more trekked in with ostrich eggs. They set the eggs on the coals, carefully cut the tops off and stirred the contents with spear hafts.

Scrambled eggs! Still no coffee.

Corbell strode along in pink sunlight, feeling good. The slapping-around was a bitter memory, with bruises to corroborate, but he set next to it another memory: Ktollisp's fist holding white hair with dark brown roots. Oh, for a mirror! He was a slave, if not worse. But he was young! With an outside chance to stay that way a long, long time.

They had crossed a row of big, badly weathered rocks, oddly textured, big as houses and bigger. Now the land sloped down . . . and Corbell found Skatholtz marching beside him. Skatholtz said in English, "What do you know of the Girls?"

There was a Boyish word for *girl-child* and another for *dikta woman*, but *Girl* was a third word, and it carried a certain emphasis.

Corbell answered, "Mirelly-Lyra told me something about them. There was a balance of power between Boys and Girls, and somehow it fell apart."

"By her tale, the Girls ruled Boys as Boys rule dikta."

"No. Look at it with more care. The Girls ruled the sky; they could move the world. By implication they controlled the weather. They couldn't change the world's rotation, but they could decide how far the world should be from the sun. In fact, they first moved the world because the sun was getting too hot.

"The Boys ruled the dikta. They could see to it that no more Boys or Girls were born." An interesting role-reversal, that. "In itself that isn't a *lot* of power, not in a crowded world where everyone expects to live forever *any*way—"

"But our land was less rich! The tales tell it so!"

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"Yeah. Look at it from the other direction. Suppose the Boys let the dikta breed like rabbits—breed fast. They kill most of the girl-children and hide most of the boy-children. The boy-children grow up. They get dikta immortality as long as they behave. Now the Boys have an army. They invade."

The land had leveled out. Ahead it sloped upward again. Skatholtz mulled it over, then, "Our tales tell nothing of this."

"That's because it never happened. The Boys couldn't *feed* such an army. Poor land. So the balance of power lasted . . . oh, tens of thousands of your years."

"I see, partly. I am not used to thinking like this. What went wrong? Somehow the Girls lost control."

"Yeah. Weather?"

"Our tales tell of a great thawing. When green things grew for the first time in our land, the Girls tried to take it. The thaw happened when the Girls grew too proud. In their pride they lost a moon, and with the moon they lost their power."

Corbell laughed. "They lost a *moon*? Hey, just how accurate could those tales be after . . . a hundred thousand years?"

"We live long. We remember well. Details may be lost, but we do not add fiction."

The land sloped upward. In the distance Corbell could see another line of big, melted-looking rocks.

"A moon. It sounds completely silly, but . . . Peerssa told me the moons of Jupiter were out of their orbits, but that's not too strange. Dropping the world into their midst could have done that. But he also said Ganymede is missing completely."

"Ganymede?"

"The biggest moon. Hell, I don't see how it fits in."

"And the sun is too hot, you said, and King Jupiter is too hot."

"And the weather is screwed up," said Corbell. "It all comes down to a change in the weather. It wiped out the balance of power. Then the Boys wiped out the Girls."

"We tell tales of that war. Weapons as strong as a meteor strike! Look, Corbell, such a weapon was used here." Skatholtz swept an arm behind him.

They had crossed a shallow dish-shaped depression a couple of miles across, rimmed by these half-melted . . . "Just a minute," said Corbell. He dropped his load of jerky and scrambled up a rock twenty feet high and of oddly uniform texture. There at the top he found lines of rust red making a great Z: the remains of a girder.

"These were buildings," he said. "It must have been a Boy city."

"When I was young I wanted to use weapons like that." Skatholtz laughed boyishly. "Now I cringe at what they must have done to the weather. But we destroyed the Girls."

"They did you some hurt too." Corbell climbed down from the melted building. They'd have to trot to catch up to the tribe.

"The tale tells that they destroyed us," said Skatholtz. "I never understood that saying."

Corbell and Skatholtz marched in silence for a time. Boys chattered ahead. It was just past noon, too

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early to hunt. Very far away, a great brown carpet flowed away from the noise they were making: thousands of animals too distant to recognize, too numerous to count.

Skatholtz said in Boyish, "Soon we reach the border to the great water. A day's march broad is that border. The word is—" Corbell learned the words for *shore* and *sea*. "The near village holds a pleasant surprise," and Skatholtz used another unfamiliar word. "I can't describe it. We must do work for it."

"All right." In his youth Corbell had never liked muscle work. But oh, it was good to have the muscles now! He asked, "Why were we talking English?"

"Because I must know you. I must learn when you are telling fiction."

He chose not to protest the injustice. "I wonder about the cat-tails."

"What do you wonder?"

"In Sarash-Zillish they rule. Here there are things bigger and more violent. How can they live?"

"Soon or late a predator kills them. Until then they are pleasant to keep near. Soon or late, everything dies except Boys."

"Before this evil you control your rage skillfully. Will we find more cat-tails among the dikta?"

"No. We never leave cat-tails with the dikta."

"Why?"

"It isn't done."

Corbell let it drop. There was a thing he dared not ask yet, but he would have to find out. How carefully were the adults guarded?

The dikta place was the second place Mirelly-Lyra would look for him. He couldn't stay long. The moment she saw him dark-haired, that moment he would have to produce Dictator immortality.

And maybe he could. One simple test . . . made carefully! He did not want the Boys chopping down the Tree of Life!"

V

They reached the village at noon. It was a strange blend of primitive and futuristic: an arc of Baths, identical to the Bath Corbell had found by the shore in One City, half-surrounding the village square, and surrounded in turn by sod huts and granaries. There was great variety among the sod structures; but they matched. The village as a whole was beautiful.

Corbell was beginning to get the idea. The ancient factories would build the Boys buildings for certain purposes. It was very easy to go on using them century after century. For other purposes they made their own, and lavished labor and ingenuity on them. He was not entirely surprised when Krayhayft spoke for the tribe, and called it "Krayhayft's tribe." He who spoke for the village had Krayhayft's strange grace, and gray in his long golden hair.

They worked all that afternoon. A couple of boys from the village went with them to supervise, shouting their orders with malice aforethought. Corbell and Krayhayft's tribe used primitive scythes to reap grain from the fields and carry it in bundles into the village square, until there was a great

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heap of it there, until the Boys of the village were satisfied.

After their labor the Boys went whooping to the Baths. Corbell waited his turn with impatience. He went the full route, bath and steam and sauna and back to the bath with the Jacuzzi-style bubble system turned on. When he emerged it was dark. They were starting dinner.

The "surprise" was bread, of course. Several kinds of bread, plus rabbit meat the villagers had hunted. Corbell ate his fill of all the varieties. The taste brought on a nostalgic mood. His eyes were wet when Ktollisp had finished singing Corbell's version of "Poisoning Pigeons in the Park."

The bread had surprised him less than the "phone booth" at one end of the arc of Baths. He dithered . . . but Skatholtz *knew* he knew about "phone booths". While Krayhayft started one of his long tales, Corbell sought out Skatholtz and asked him.

The skeletal boy grinned. "Were you thinking of leaving us through the *prilatsil*?"

"Not especially."

"Of course not. Well, you've guessed right. This village trades their grain for other bread-makings all across the land."

"I didn't think the *Prilatsil* could send that far."

"The land is crossed by a line of *Prilatsil,* close-spaced. Do you think we would handle emergencies by traveling on foot? Look—" Skatholtz drew a ragged circle—Antarctica—and a peace symbol or chicken's-footprint within it. "If there were serious reason to travel, these lines of *Prilatsil* exist. Since the time of the Girls they have been used four times . . . more, if tales have been lost. We keep them in repair."

Corbell kept his other questions to himself. He hoped he would not have to use the *Prilatsil*. They were too obvious.

When they left in the morning, three of Krayhayft's tribe had stayed behind, and three of the villagers had come with them. No big deal was made of it, and Corbell had to examine faces to be sure it had happened. They carried loaves of bread in their cloth bags.

* * *

Now there was no more grain. The land dropped gradually for twenty miles or more, and ended in mist. Nothing grew on it but dry scrub. Off to the right of their path was a cluster of sharp-edged shapes, promontories all alone on the flat lifeless ground.

Nature sometimes imitates the regular, artificial look. Corbell asked anyway.

"They are artificial," Skatholtz told him. "I have seen them before. I have my guess as to what they are, but . . . shall we look at them? Some of Krayhayft's tribe have not seen them."

The troop veered. The structures grew larger. Some lay on their sides, disintegrating. But the nearest stood upright, its narrow bottom firmly set in the ground. The tribe clustered beneath a great curved wall leaning out over their heads.

"Ships," said Corbell. "They carried people and things over water. What are they doing so far from the ocean?"

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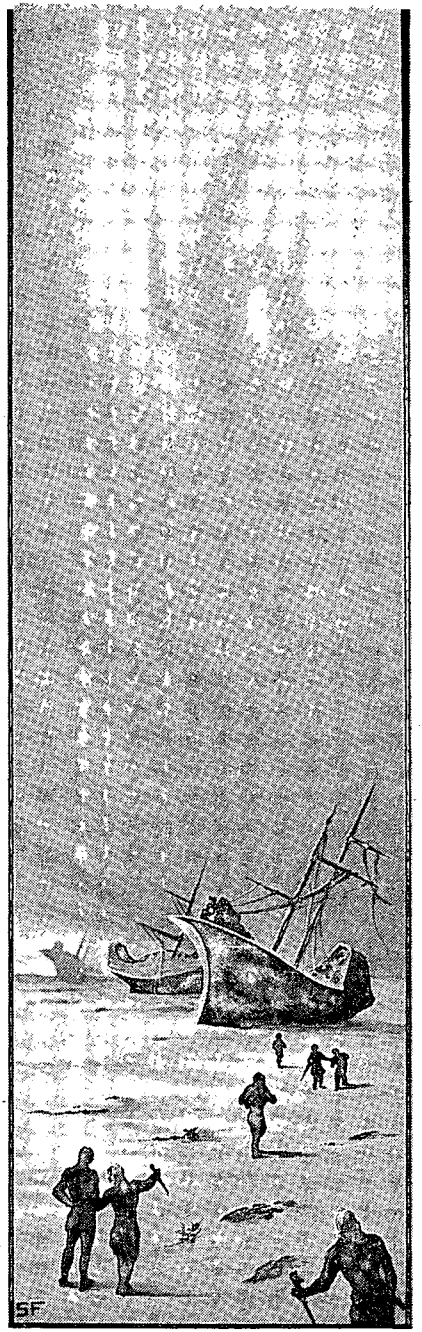

"Perhaps there was ocean here once."

"Yeah . . . yeah. When the world got so hot, a lot of the ocean went into the air. This used to be sea-bottom mud, I think it was part of the continental shelf."

Krayhayft said, "That fits with the tales. Can you guess what they might have carried?"

"Too many answers. Is there a way in?"

He didn't understand when Krayhayft untied the fire starter from his belt. He would have stopped him otherwise. Krayhayft twisted something on the fire starter, pointed it at the great wall of rusted metal.

The metal flared. Corbell said nothing; it was already too late. He watched the thin blue beam spurt fire until Krayhayft had cut a wide door.

The metal slab fell away. Tons of mud spilled after it. Aeons of dust and rainwater . . . They waded up the mud slope, joking among themselves, and Corbell followed.

The hull was one enormous tank. There were no partitiions to prevent sloshing. Corbell sniffed, but no trace of the cargo remained. Oil? Or something more exotic? Or only topsoil for the frigid Antarctic cities? Topsoil wouldn't slosh around . . .

The surprise was on deck and above deck. Masts! There was no place here for human sailors. There were only proliferating masts reminiscent of clipper ships, and cables all running to a great housing at the bow. A housing for motors and winches and a computer.

The hull had apparently been

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sound; the masts were in fine shape. But time had reduced the computer to garbage. That was a pity. It was as big as *Don Juan's* computer that had housed Peerssa's personality. Conceivably it could have told them a great deal.

* * *

They marched down into the fog, and the fog swallowed them.

Corbell heard regular booming sounds which he failed to interpret. Then, suddenly, they had reached the sea. Breakers roared and hissed across a rocky shore.

They rested. Then, while others collected brush for a fire, three of the Boys swam out into the breakers with spears and the rope. It looked inviting. The water would not be cold. But Corbell had seen the Boys hunt, and he wondered what toothy prey waited for them.

Two came back. They swam ashore with the rope twitching behind them, and collapsed, panting heavily, while others dragged the rope in with its thrashing burden. They beached twelve feet of shark. The third Boy didn't come back.

Corbell couldn't believe it. How could immortals be so careless of their lives?

The Boys were subdued, but they held no kind of formal ceremony. Corbell ate bread that night. He had no stomach for shark. He had seen what came out of the shark's stomach.

He lay long awake, puzzling it out. He had been old and young and middle-aged, in no intelligible sequence. With any luck he would *stay* young. He had fought for his life and his lifestyle against the massed might of the State; he had never given up, not with all the excuse in the world.

Did they get tired of too much life?

Corbell didn't doubt that they could build machines to kill off the sharks. The factories that kept turning out identical Bedrooms and Baths and Offices were a tribute to their laziness; but they were also brilliant. Then why were the sharks still here? Tradition? Machismo?

In the morning the Boys were cheerful as ever. In the afternoon they reached the dikta.

THE DICTATORS

I

Six City, Dikta City, showed first as a bar of shadow along the shoreline, then as half a mile of blank wall with a low windowed structure peeking above the center. Dikta City showed its back to the approaching Boys.

As they rounded the end Corbell saw its face. Dikta City was a single building, four stories tall, half a mile long, and as thick as a luxury hotel. Its face looked north toward the sea and the sun, and was rich with windows and balconies and archways. Between city and sea was a semicircle of low wall with the tops of trees visible within.

The dikta were emerging through an arch in the low garden wall. In scores now, they waited.

Dikta City could never have been under a dome. It was the wrong shape. The city must have been built late, in hothouse Antarctica, specifically to house the adults.

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Topsoil had been spread over the salty, barren continental shelf, and walled against the winds. The sea and the garden within the wall would be the only food sources for miles around. It would be difficult to leave this place, Corbell thought.

A couple of hundred dikta waited until the Boys were yards away, until Corbell had counted seven men among a horde of women. Then they cringed, all of them at once. They held the cringe as Krayhayft stepped forward alone.

"We come to repair your machines," Krayhayft said, "and to take your boy-children to ourselves."

"Good," said one among them. He had a white beard and shoulder-length white hair, very clean and curly. He straightened from the cringe, and so did all the others . . . and now Corbell was impressed by their general health and dignity. They didn't act like slaves; the cringe *had* been a formality. Corbell wondered what would have happened if he had cringed naturally, that fourth day in Sarash-Zillish. The Boys might have killed him as an escapee.

All of the dikta were studying Corbell.

Krayhayft noticed. He spoke at length in a voice that carried. Corbell couldn't follow everything he said, but he was telling a condensed version of Corbell's story. The spaceflight, the long voyage, some complex phrases that might have related to relativistic time-compression; the flight from Mirelly-Lyra . . . no mention of the mad dikta woman's motives. No mention of dikta immortality. Corbell was sure of that; he was listening for it.

The old man listened and laughed; he was vastly entertained. At the end he came forward and said, "Welcome to our refuge, Corbell. You will have interesting things to tell us. I am Gording. Do I speak slowly enough?"

"A pleasure to meet you, Gording. I have a lot to learn from you. Yes, I can understand you."

"Will you join us tonight, then? We have room in the Dikta Place for many more children. It will be instructive to see what your children are like."

"I—" Corbell choked up. The women were examining him and speculating in whispers. It wasn't just his browline, though even the women were half bald. His brown-and-white hair must have caught their attention too . . . and his answer was rudely delayed. "I'm happy you accept me for that important purpose," he said.

What he was was nervous. Abruptly he was very conscious of his near-nakedness. The dikta were entirely naked.

One of the women—her long black hair was just showing grey—said, "It must be long since you made children with a woman."

Corbell laughed. Divide by twelve—"A quarter of a million years."

What she asked then raised laughter. Corbell shook his head. "I may have forgotten how. There is only one way to know."

He helped the Boys set up camp.

The garden was a semicircle within the wall, far more orderly than the jungle in Sarash-Zillish. A

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grove of trees occupied the center. The Boys set up camp under the trees, and built their fire with wood brought by dikta women.

"You may go to the dikta," Skatholtz told him then, "but you must not tell them of dikta immortality." It didn't seem to occur to him that he might be disobeyed.

"What about my hair? I know damned well they noticed it."

Skatholtz shrugged. "You are an early type of dikt from before stories were told. Tell them all dikta once grew hair like yours. If any learn what you know, their minds will be . . . all that they know will be taken from them."

"I'll keep my mouth shut."

They were surprising enough. Like the Boys, they had pallid, almost translucent skin, coupled to all the shapes natural to human beings: noses broad and narrow, lips thick or thin, bushy eyebrows or eyes with epicanthic folds, bodies burly and invulnerable or slender and fragile . . .

"Vitamin D!" Corbell said suddenly. He tried to explain: "Your skin makes a thing you need, from sunlight. A hundred thousand years of red sunlight has turned you white by killing people when their skin was too dark to let sunlight in. Even so, you need your skin bare all the time."

The women were nodding. Gording said, "A life-chemical, *kathope*."

"But how do you live in the long night?" Almost six years!

"Kathope seed. We press it for the oil," said Gording.

Escaping Dikta City should have been easier in the long night, when the Boys all gathered in Sarash-Zillish. But fugitives would have to carry their own kathope seed- . . . yeah, and Boys would tear it up if they found it growing anywhere but here or in Sarash-Zillish. Corbell was beginning to worry. Maybe he really *was* trapped.

He asked about the coming festivities.

"We take sex in company," T'teeruf told him. At a wild guess she was sixteen or so, her face heart-shaped, her eyes large and expressive, her mouth full and made for laughter, her hair a tightly coiled ruff. Even she was half-bald. "Sex is the only pleasure we have that the Boys can't ever understand. That, and giving birth." Her eyes dropped shyly. "I haven't done that yet."

II

The orgy hall (what else could you call it?) was an afterthought. It seemed the Boys hadn't thought of putting one in when they built Dikta City. The dikta had repaired the omission by building a kind of infinity sign on the roof, composed of twelve of the mass-produced triangular bedrooms arranged like two pies of six wedges each, with two baths set between. They had knocked out all the inner walls. The small toilets that belonged to the bedrooms still had doors (at least the dikta kept that form of privacy!), but the closets didn't, and the "phone booths" had been ripped out. Of course.

When Corbell arrived there were dikta on every horizontal surface, beds and couches and coffee tables,

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and more coming in. Half a dozen women gestured invitation from one of the beds. Corbell accepted.

His nervousness left him quickly. Rippling waterbed and warm woman-flesh formed his pillows, and it was altogether delightful. In courtesy and because she was nearest, he lay with an older woman first. She expressed no disappointment, but he was too quick and he knew it. After all that time, to *hurry* . . . and *still* it felt like a mighty victory. "I gave this up forever," he said, and thanked her with his eyes.

Now he beat his chest and warbled the Challenge of the Great Ape, and now he took a woman with pronouncedly oriental features and warm, skilled hands. This time it was longer, better. Their partial baldness made them more exotic. Their breasts were alike, large in diameter but flattened; even in older women they did not sag.

They asked him about his sensations. Even with his wife Corbell had had difficulty analyzing his own reflexes, and he had trouble now. They probed delicately, with questions and with stroking fingertips, exploring his ancient nervous system and telling him about their own.

A younger man joined them. Two women left, were replaced by two more. Corbell scratched T'teeruf's back while she was in sexual congress. Was he through for the night?

Evidently not—

The man was using his hands and toes too, attempting to satisfy five women at a time, reminding Corbell of old paintings from India. Egotist! But it seemed fair, given the distribution. When inspiration came, Corbell tried it himself. It took some concentration . . . and he had never been *in* practice. He was tentative, a bit clumsy.

One of the women asked him about it. He told her. One woman to a man . . . monogamy . . . no children's immortality . . . The faces around him closed down like masks, and the woman changed the subject.

He hardly noticed. He was drunk and euphoric on the hormones bubbling in his blood. He watched the other man and two women, trying to follow what they were doing, but it all came out as a tangle of arms and legs.

"There are lost skills," T'teeruf told him a bit wistfully. "Positions used in free fall. Now they exist only in the tales."

He tried the sauna (crowded) and the bathtub (crowded). Hot water churned with bubbles and the currents generated by a couple on the far side: Gording and the older woman who had been his first since the corpsicle tank. Wet woman rubbed against him. A water-splashing war erupted and died out. Corbell and a young woman with golden hair made love, sitting cross-legged in the tub facing each other.

That was when he looked up and saw the Boys: half a dozen of them seated on the edge of an open airwell with their feet hanging down toward the tub. They passed comments to each other while they enjoyed the show. Ktollisp caught him looking and waved.

The girl's eyes followed Corbell's upward, then dropped in disinterest.

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Okay, it didn't bother *her* . . . When Ktollisp waved again, Corbell waved back.

In the bedroom in One City there had been an old videotape of two couples demonstrating lovemaking positions. Even then Corbell had sensed the presence of an audience out of range. Now he *knew*. They had been there at the coffee table: Boys, or Girls watching borrowed dikta, or even (how old was that tape?) Boys and Girls mixed, before the great rift.

The orgy's impetus dwindled. Now half of Dikta City clustered on the beds and couches and coffee tables in half of the Bedroom complex, questioning Corbell. His audience thinned as some left by the stairwell; others went by twos and threes to the other multiple bed complex and came back later. Corbell talked on and on. The first man to see the bottom of the universe, he had his audience at last. Euphoria!

Suddenly he was yawning uncontrollably.

No, they didn't use the Bedrooms for sleeping. They slept in a ground-floor room. Gording volunteered to walk him over. The fresh air cooled his damp body and cleared his head. The stars were slightly misted over.

Gording pointed to a steady, pink-tinged star in the north. "Corbell, you came from space recently. What is that?"

"A world like a little Jupiter. It shouldn't be there, but it is."

"It grows brighter, but it does not move against the pattern of fixed stars."

"That bothered Krayhayft too." It *was* brighter, wasn't it? "Listen, I'm too tired to think."

The sleeping room was a kind of greenhouse. The sleeping surface was tall grass, living grass, already covered by bodies. Gording and Corbell found space, lay down and slept.

* * *

The sun shining through glass walls woke him. Four women were still curled on the grass, isolated. The rest were gone.

He had daydreamed of nights like last night, when he was much younger. Without the bald heads, of course. So what? He was lucky they saw him as human. Lucky he could still see them as human, too. Their bodies hadn't changed much. Their minds had changed more; they seemed geniuses . . . and they seemed placid in their slavery.

If they hadn't freed themselves from the Boys in all those eons, how could Corbell? Corbell remembered that there was a possible answer . . . that had to be tested.

* * *

A ceremony was in progress at the Boy encampment. Eight dikta males (he must have missed one yesterday) were presenting five boy-children to the tribe. Of the three cup-bearers, Krayhayft who seemed to be the oldest now seemed to be in charge. The rest of the Boys watched solemnly. Three carried the remaining cat-tails round their necks.

Corbell decided against joining them; he took a place by himself

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and kept his mouth shut. His chance would come.

The children were five to seven years old. They seemed overawed and immensely proud. Of the adults, it was Gording who named each child and described him: his strength, his accomplishments, his habits good and bad. For a moment Corbell thought one of the children was being rejected, and that didn't fit his preconceptions at all. Then he realised that the boy-child's *name* had been rejected. He was being given a new one.

The ceremony broke up suddenly. The boy-children stayed with the Boys; the men went off talking together. Krayhayft called to Corbell. "I know that walk and that look."

Corbell went over.

"The walk means you have used muscles in unaccustomed labor. I know the bright smile and red eyes too."

Corbell grinned. "You're right."

"You had fun?"

"You'll never know."

"I never will. Some of the boy-children we take try to be the best so that they can be dikta. Do you believe that?"

"Sure. Did you?"

Krayhayft scowled. "It didn't matter. I was not best at anything. I burnt food. My spear missed the prey. I don't like to remember that long ago. I remember that I wanted to go home. What does a yearling know of the difference between living five years or six, and living forever?"

"And sex:"

"What does a yearling know of sex? What does a Boy know of sex? He can only watch." Krayhayft grinned suddenly. "Last night was the first time I ever saw—" He beat his chest with his fists and gave an ululating yell.

"The Tarzan act. I was a little crazy."

"That seems normal."

"What happens next? How long do you stay here?"

"If some machine needs to be repaired, we stay. Otherwise we leave tomorrow. We have many tribes to meet, to tell them that Sarash-Zillish is ready for them."

* * *

Time was constricting for Corbell, but he dared not hurry. At the moment he had nothing to do at all. And everyone else was busy.

On the second floor Boys had opened what might be a power generator. They ordered him away from their secrets.

In another room women wove cloth of exceptional beauty and color. "During the long night we cover ourselves," one told him. She refused to teach him how to weave. "The thread might cut off some of your fingers."

"It's *that* strong?"

"What would be the point of making cloth less durable?"

He stole a loop of the thread, held it a moment, then put it back. Sure it'd make wonderful strangling cord, but where would he hide it?

He wound up in the kitchen/dining room complex, serving food and watching the cooks. He had been a pretty good cook once, but no sane chef would try to use someone else's kitchen without exploring it first. And it was bad

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news. The implements and measuring spoons were unfamiliar, of course. But the basic foods and the spices were also unfamiliar. He was going to have to learn to cook all over again.

In midafternoon a woman offered to relieve him at the serving counter. She took a second look and said, "You are unhappy."

"Right."

"I am Charibil. Can I help?"

He couldn't tell her *all* his problems. "There's not much here I'm good for."

"Men don't have to work if they don't want to. You do have one useful talent. You can improve the variety of traits among us."

Their gene pool was a little skimpy, yeah. Though there was variety. Charibil herself had the epicanthic fold and small features of an oriental, though she was Corbell's height. The uniformity was there too: pale skin, breasts wide and flat, half-bald scalp and curly black topknot, slender frame . . .

She jumped suddenly to her feet. "Come to the orgy room, Corbell. You need cheering up. Is it displacement from your tribe that bothers you? Or fear of the ancient dikt and her cane?"

"All of the above. Right, I need cheering up."

If he thought to be alone with Charibil, he was wrong. She called to three friends as they passed, and one joined them; and then a small golden-haired woman invited herself into the group; and four women presently reached the Bedroom complex with Corbell. Others were there: a man and a single woman who seemed to want to be alone. Charibil and the other woman suddenly picked Corbell up by arms and legs, swung him wide and slung him through the air, laughing at his startled "Hey!"

The surface surged as he splashed down, surged again as they joined him. He laughed with them. Only for a moment, the laugh caught in his throat.

There was a mirror over the bed.

He *couldn't* have missed that last night . . . and he hadn't. The others had those mobile sculptures over them. Had the women noticed anything? Corbell pulled Charibil against him, rolled onto his back with her on top . . . and looked up at himself.

Long, thinning white hair sprang from a military haircut in chestnut brown, in the damndest hairdo Corbell had ever seen. In the face there were frown lines around the mouth and eyes. He saw a lean, well-muscled, middle-aged version of one well known to him: a certain brain-wiped State criminal.

They'd noticed his tension. They turned him over and massaged it away. The kneading of muscles gradually became eight hands caressing him . . . and Corbell was seduced twice, to his own amazement. He felt that he was falling in love with four women: an impossible thing for CORBELL Mark I. In post-coital sadness Corbell knew at last that Corbell was dead . . .

He distracted himself with questions.

"No, all nights are not like last night," Charibil told him. "The men would tire of us. Last night was special. We stayed away from this place for five short days. We

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like to give the Boys something to watch."

"Why?"

"Why? They rule us, and they live forever, but there is one joy they can't know!" she gloated.

You can live forever! It was on the tip of his tongue . . . but he said instead, "What do the men do when they're not up here? I mean, if they don't work—"

"They make decisions. And, let me see: Privatht is perhaps our finest cook. Gording deals with the Boys in all matters; in fact he is with them now. Charloop makes things to teach and entertain children—"

"Gording in in the Boy camp?"

"Yes, he and the Boys had some important secret to discuss. They wouldn't—"

"I've got to be there." Corbell rolled off the bed. "I'm sorry if I'm being rude, but this is more important than I can tell you." He left. Behind him he heard tinkling laughter.

III

It was near sunset. Boys and boy-children were roasting a tremendous fish over coals. Ktollisp was telling them a tale. The children were making much of a pair of indolent furred snakes. Corbell looked for Gording's white hair.

He found Gording and Krayhayft and Skatholtz a good distance from the main group. They were spitting Boyish too fast for Corbell's understanding. He caught the word for *Girls*, and his own word *Ganymede*. And he saw the third cat-tail curled in an orange spiral on a rock almost behind Skatholtz.

They saw him. Gording said, "Good! Corbell's sources of knowledge are different from ours."

Krayhayft scoffed. "He did not even see the implications."

Skatholtz said, "Gording is right. Corbell, in one of our tales there is a line with no meaning. The tale tells of the war between Girls and Boys. The line tells that each side destroyed the other."

Corbell sat down cross-legged next to Skatholtz. "Could this have something to do with our strayed planet?"

"Yes, with the mere fleck of light that grows brighter but does not move against the background of fixed stars. Do you see what that might mean?"

He'd been assuming that that dot of light was the banded gas giant Peerssa had shown him; but that didn't have to be true. If it grew brighter without moving . . . grew closer, with no shift sideways?

"It's coming down our throats!"

"Well phrased," said Skatholtz.

But it was monstrously unfair, that Corbell should have found eternal youth just before the end of the world! "You're guessing," he said.

"Of course. But the Girls ruled the sky," Krayhayft said. "When the Girls knew they had lost, they may have aimed your missing Ganymede on a long path to smash the world."

He couldn't let this moon thing distract him. When his chance came he had to be ready. But did it matter? If *Don Juan* had brought him back just in time to face *this*!

"Wait. Why not a short path?"

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Krayhayft shrugged. Skatholtz said, "Who can know the mind of a Girl? They are long dead."

"They were intelligent. The longer the path, the more chance the moon would miss Earth. It's been—" Divide by twelve. "—a hundred thousand years; after all."

"We do not know how they moved worlds. How can we know what difficulties they faced? Perhaps the long path was their only choice."

Corbell stood up. He stretched, then sat down on the smooth rock behind him: a big boulder with a cat-tail sleeping on top, well behind his head. He braced his feet against a smaller, half-buried boulder.

"I don't like it. I don't like my place in it. Any minor design change in *Don Juan* and I could have been back a hundred thousand or two hundred thousand years sooner. What are the odds I'd get here just in time?"

Gording laughed at him. "What an odd coincidence, that I should be alive at this time!"

"And I!" Skatholtz cried.

Corbell flushed. "Could the tale have meant something else?"

"Of course," said Skatholtz. "No detail is given."

"Okay. The Girls knew they'd had it. They were looking for revenge . . . but in the sky? They must have lost control of the sky already. Otherwise they'd have put the Earth back where it belonged, where it wouldn't get too much heat. So they *couldn't* have thrown a moon at Earth, long path or short path."

"The moon is there," said Krayhayft.

But Skatholtz said, "Let him speak."

"Did I tell you what Mirelly-Lyra told me? She—" He tripped on the Boyish phrases, then, "She left zero-time with a thousand prisoners. Some of them lived to reach this place. She says the Boys took them, but she escaped."

"You've lost the thread of thought," Krayhayft reproved him.

"No, it fits in. Look, if the Girls were that close to *ruined*, there wasn't much they *could* do. But if the Boys were keeping all the dikta in the same place, the Girls could wipe *them* out."

And as he said it he knew he was right. They all saw it . . . and their minds were better than his. Without the dikta there would be no more Boys. Only a dwindling population of immortals dying one by one, by accident, boredom, or act of God.

"Your Mirelly-Lyra escaped," said Skatholtz, "because there were too few Boys left to hunt her down. The new dikta became pampered pets, they who had been criminals in prehistory." He barked bitter laughter. "But the moon still comes. If it is a random result of the Girls' loss of control, still it could destroy us. Even a near miss—" His Boyish went into high gear . . . and the others joined in . . . faster and faster . . . excluding Corbell. Suddenly the Boys got to their feet and left.

For an instant Gording let his fury show . . . and then he relaxed. And Corbell tested his footing. Butt on smooth rock, feet in front of him against rock that seemed steady . . . and he dared not look behind him.

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"It would not do," Gording said bitterly, "to discuss such important matters with a dikt."

"What was that about?"

"They must choose, you see. If the moon strikes the world, time ends. But if the moon comes by mischance, it may still pass close by the world. Tides. Earthquakes."

"Oh. Dikta City's right on the ocean. They'll have to move you."

"Move us how? Where? They can't let us go free. We are their treasure, their source, their valued property." Gording was angry already: almost angry enough to strike out at the nearest target.

Now. "Maybe they'll just take some women, the best they can find. Mate them with the boy-children. There's no scarcity of Boys. They can wait till the stock builds up again. After all, they have to be fairly careful with their breeding, considering that their original stock was a bunch of rejects from—"

Unexpectedly soon, unexpectedly fast, Gording leapt for his throat.

Corbell pushed hard against the rock, kicked himself out from under Gording's leap. He reached over his head.

Startled from sleep, the cat-tail tried to leap away. Corbell's hand closed on its tail.

Gording hit ground and came at him again, face calm, hands outstretched for murder. He wasn't quick enough. Corbell swung the cat-tail into his face. The beast's teeth closed in Gording's neck. In that moment of distraction Corbell swung a haymaker at his jaw.

Gording jerked aside. The cat-tail was a tight fur collar, its teeth were still in his neck, but he hadn't been distracted for an instant. Hopelessly off balance, Corbell watched the old man set himself and lash out.

The hard fist sank into his solar plexus. Corbell doubled over. Lightning exploded at the nape of his neck.

* * *

His belly hurt . . . his neck hurt . . . he was curled on his side in crushed strawberries. He tried to uncurl.

They were standing around him, a lot of Boys looking down. Skatholtz was shaking his head and smiling. "Magnificent, Corbell!"

"Then," said Corbell, "why am I lying on the ground hurting? Never mind." He uncurled a little more. Gording stood relaxed, his hand covering the flesh torn by cat-tail teeth. He showed no inclination to resume hostilities.

Corbell said, "I'm sorry. I shouldn't have said that. Maybe it's jealously. You're all like . . . you're all smarter than I am, and it shows."

There was blood beneath the hand Gording held to his neck. He breathed heavily. He said, "I understand. You were careless with an unfamiliar language. I should not have taken offense. It will be best if I rejoin the dikta for tonight." He turned away and took two stumbling steps before hands closed on his arms.

Krayhayft was smiling. His hands made a wiping motion. "That won't serve. You can't go back to them, Gording. What would they think when your hair changed color?"

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Gording laughed. "It was worth trying."

Corbell said, "Shit!"

"No, no, Corbell, you did a fine job of acting. It was the set of your muscles that betrayed you everywhere. I couldn't know why you wanted me to attack you, and I had to find out."

"I'm sorry. I couldn't think of any other way. I still don't know . . ."

Krayhayft said, "We'll know soon enough. The logic holds. A cat-tail bit you some days before we found you. We saw the mark. Our tradition is that the dikta may not enjoy the company of cat-tails. We know that long ago it was possible to change the nature of a living thing, and we know that it was done to cat-tails. Why should they not make dikta immortality as Boys make spit? But we'll watch you as we go, Gording, to see if you grow young.

"And as we go, Corbell, we will think of some useful punishment for your deception. Already I have an idea.

"And we go *now*."

IV

By dead of night the tribe moved along the shore. They carried neither food nor water. Jupiter showed a bright gibbous disk above the dark sea. The mystery planet showed too, near Jupiter. Corbell picked out other moons, and a moon-shadow on Jupiter's banded face.

One of the children had gone to sleep and was being carried. The others asked a thousand questions of laughing Boys. Corbell listened to the answers. Details of the march ahead . . . other bands of Boys . . . wondrous machines . . . the gathering in Sarash-Zillish . . . nothing he hadn't heard or guessed.

He waited his chance to talk to Gording alone. It never came. Gording marched at the head of the line, under escort. When Corbell tried to catch up he was barred with spear butts.

By morning they were thirsty.

By noon they were very thirsty, and loud were the complaints of the boy-children. Gording was showing the strain of unaccustomed hiking, but he showed it silently, in the slight weave to his walk and the occasional stumble.

In the afternoon they reached a river. The splashing was loud as Boys and boys drank and then swam. Here they camped. Corbell and others caught fish with makeshift hooks and lines of thread that might have come from Dikta City. Corbell was not allowed to clean his fish; he was not allowed a knife.

And this was the thread that would make wonderful strangler's cord, if it didn't cut the strangler's fingers . . . but as he considered his fishline he caught Krayhayft grinning at him. Krayhayft held out his hand. Corbell put the fishline in it.

The river had cut a deep gorge into the former sea bottom, leaving high, sheer cliffs of layered sandstone. All day they followed the twisting, beautifully colored walls. At sunset, where the cliffs constricted and took a sharp turn, they came on a hidden village. The

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village occupied both sides of the river, joined by a wide bridge. Beyond the village the desolation continued to the horizon.

The villagers made them welcome and fed them. Corbell entertained with a medley of advertising jingles. Afterward Krayhayft began a tale while Corbell made himself comfortable against a convenient boulder.

It seemed to him that the village was a well-placed trap.

If dikta followed a band of Boys from Dikta City, they would have to go around the village, climbing cliffs to do it and leaving traces of themselves, and into more desolation. Unless they wanted to risk raiding the village . . .

There was a "phone booth" at one end of the bridge. The bridge was a wide arch of prestressed concrete or something better, its lines singularly beautiful. And these were the only signs of advanced technology among basic and primitive structures.

There had been bread and corn with tonight's fish. There must be a working "phone booth" here to bring them. But *was that it*? It was too blatant. It might be a trap.

A voice behind Corbell's ear whispered, "We will not let you use the *Prilatsil*."

Corbell turned to stare rudely at the intruder. He had *not* been watching the booth.

The Boy was of the village: a pink-eyed, golden-haired albino with a narrow ferret face. He almost lost his footing as he squatted next to Corbell. His loincloth was animal skin.

He was young, then. Corbell had learned to tell. The older Boys were never awkward, and they did not brag of their kills by wearing the skins. He grinned and said, "Try it if you like. We would bruise-you."

"I think they'll bruise me anyway," Corbell said. He'd been wondering about Krayhayft's "punishment." Damn Krayhayft. Corbell would be a bag of nerve-ends before the blade fell.

"Yes. You lied," said the golden Boy. "I am to be there when punishment comes."

"Sadist," Corbell said in English.

"I can guess the meaning. No. We do not make pain for pleasure, only for instruction. Your pain will be instructive to you and to us." The Boy chuckled gloatingly, making a liar of himself, and got up.

Now, what was that all about? Corbell expected to die as soon as Gording began to grow young. He knew too much. Or would they only wipe his memory? He shivered. It would still be death, though it would let them use the ancient felon's genes.

* * *

They left carrying provisions. One of the boy-children stayed behind. Half a dozen villagers came with them, including the young albino.

The continental shelf had been wider in this area. It was still barren. The day was nearly over before they reached, first fruit trees, then cornfields. They camped in the corn.

They passed a larger tribe on the third day. For a time the two tribes

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intermingled, exchanging news. Then the larger group veered away, taking two of Krayhayft's tribe and two boy-children.

They passed single human beings at a distance. "Loners," Skatholtz told him. "They tire of others around them. For a time they go alone to know if they still love themselves. Krayhayft has done it six times."

Through waist-high corn they marched. In early afternoon a herd of dwarf buffalo passed, tens of thousands of them, blackening the land and raising continuous rolling thunder. The trampled path was a quarter hour's march across: corn churned into the dirt, and the corpses of aged buffalo unable to keep up. For the first time Corbell saw vultures. Vultures had survived unchanged.

Skatholtz bent their path to take them through a ruined city. An earthquake, or Girl weaponry, had shattered most of the buildings, and time had weathered all the sharp edges. Corbell saw sand-blasted public "phone booths"; he ignored them. He'd seen no evidence that power was still coming to this ruin.

Boys had made a semipermanent camp at the far edge of the ruined city. Krayhayft's tribe joined them, and contributed ears of corn to their dinner. Corbell saw what they were using for cooking.

What the locals had mounted on rocks above their fireplace was a piece of clear glass seven feet across, curved like an enormous *wok*: a good enough frying pan except for the dangerous jagged edges. It had to be a piece of bubble-car.

* * *

On the fourth day they passed two tribes, and joined with them for a time, and left them behind. With the other tribe went the last two boy-children. Corbell couldn't help wondering if that related to *his* situation. There are things you don't do in front of children.

Gording was having less trouble keeping up. If the chance came, the old man would be able to run . . . but running wouldn't do it. The Boys were faster. Corbell wanted transportation.

"Phone booths" didn't send far enough. Useful for hiding, but not for reaching safety. A car would be better. Or . . . what did the Boys use to lower a dozen bedrooms onto the roof of Dikta City? A giant helicopter? Some big flying thing, anyway.

He wouldn't find any of these things outside a city, Corbell thought. Maybe they existed in Sarash-Zillish alone. He would reach Sarash-Zillish too late; Gording's hair would be showing black by then.

Corbell tried to listen to what the Boys were telling the loner about Corbell. Unfamiliar words, and the drumming of the afternoon rain, made that impossible. But the wanderer derived much amusement from what he was hearing.

When the afternoon rain ended, it revealed reaching towers whose tops sketched a dome-shape.

They camped a mere hour's distance from what seemed an intact city. Corbell slept badly that night. If he could break loose, to reach the

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city alone . . . But every time he looked around him someone was watching him. As if they could read his mind . . .

V

Parhalding was bigger than Sarash-Zillish. Mud and rust had done their work . . . and invading soil and grass and trees and vines. The buildings still stood, most of them. Their flat roofs sprouted green heads. Grapevines and blackberry vines swathed their waists. Corn and wheat grew mixed where soil was shallow. Where soil and water could pool, there were gnarled old trees bearing varied fruit and walnuts.

Corbell picked what looked like a puffy lemon. (The limbs of the tree were thick and low . . . its green head touched vines swarming to the second story of a building with empty windows . . . but Boys climbed like monkeys, and they were too close, and *watching*.) The fruit tasted like lemonade, like lemon with sugar.

Parhalding was what an abandoned city looked like. In Sarash-Zillish he had taken the state of preservation for granted. Foolish. He should have been looking for caretakers.

The vines bulged oddly, there near the corner, and something glinted within the bulge. Light shifted as he walked . . . and Corbell became certain that there was a bubble-car under the bulge. How badly damaged? Corbell caught Gording's fraction-of-a-glance. Had anyone else caught it? The Boys couldn't know everything . . .

. . . But the tribe had clumped inward as they walked. He might have thought they were afraid of ancient ghosts. But they had converged to a compact mass with Corbell in the middle, and it was Corbell who was afraid.

That building ahead: no vines, no green top. Someone had maintained it. Corbell knew it by its shape: a hospital.

The hospital's big double doors opened for them. Now the dozen Boys around Corbell were close enough to trip over one another, though they didn't. Indirect lighting came alive slowly, showing an admissions desk, a shattered picture window with a few glass teeth still in it, cloud-rug and sofas cleaned of glass; and a wall covered by a double polar projection map with the polar caps prominent.

The last Boy through the door fell to his knees. His head was gone. His neck jetted bright blood.

Gording was at bay. The young albino was between him and the double doors. As the albino came at him Gording threw a rock, sidearm, to miss. Corbell tried to make sense of what he was seeing. The rock passed behind the albino's neck, turned sharply and circled his throat. Gording jerked hard on the other rock still in his hand.

Then it made sense. The albino screamed without sound and clawed at the air between them. His neck parted cleanly. The doors opened for the headless corpse as it stumbled backward. Gording brushed past it and was gone.

TO BE CONTINUED

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It is not his technology—that is merely a tool—that makes Man a deadly adversary, but his mind. . .and spirit.

I.

THE PRACTICE YARD fell silent. Sensing a presence behind him, Jerome lowered his sword, and turned slowly to face Father Ribaud, the Sword Master. Behind him, standing nervously at the edge of the yard, was a young Messenger dressed in the black robe of one who served the Grandfathers.

A thrill of anticipation ran shivering up Jerome's spine. A Message from the Grandfather! Perhaps his request for Audience was being answered!

Ribaud nodded somberly. "Yes, it's for you. From the Grandfather."

Jerome nodded slowly, trying to read the old man's face for information. "Did he say what it's about?"

The Sword Master suppressed a look of amusement. "The simple way to find out is to go over and ask the lad. He's the Messenger, you know, not I. And from the looks of him, he'd be only too glad to deliver his message and be off." Ribaud nodded towards the Messenger, who was anxiously shifting from foot to foot. "He's nervous as a cat what with all the Mushin floating around this yard. His mind isn' trained to handle it yet." He turned to the silently standing students "Which reminds me that no one told the rest of you to stop training and gawk around like a bunch o Novices. Back to work, the lot o you. Start off with five hundred each, head, chest, and wrist cuts slowly. Control your breath and calm your mind."

Practice began again, each student reciting the Chant of Calmness as he swung his sword in unison with the others. Ribaud watched fo a moment, then motioned to Jerome and walked with him over to where the Messenger stood waiting.

"Messenger—Brother Jerome," Ribaud said, and stepped back ou of easy earshot, though Jerome knew he would hear every word He might be old, but Ribaud wa still in possession of all his faculties, including an incredible, cat like swiftness.

The Messenger licked the sweat from his upper lip and focused distressed eyes on Jerome. "Brother Jerome," he began, his voice cracking a little. "Grandfather bids me call you to his presence. Father Ribaud is to prepare you for Audience. Come as soon as you are

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ready. I . . .I . . . uh . . . that is all." Abruptly the black-clad youth turned and fled the practice yard.

A sardonic grin on his face, Ribaud sauntered over to where Jerome stood gazing after the retreating Messenger. "So. Audience it is. Face to face with the Grandfather. And I'm to prepare you. No easy task, that." The Sword Master sighed. His tone had been bantering, but his concern was obvious.

While Jerome racked his practice sword and changed from padded practice robe to a regular one, Ribaud carefully outlined the proper procedure for Personal Audience with the Grandfather. From time to time the young man would nod or grunt, but otherwise gave no indication he was listening. Ribaud knew otherwise. Nothing really passed Jerome by. He was incredibly quick and bright.

Even while talking, the old man's mind went back, back some fifteen years to the day he had found Jerome. The lad had been sitting amid the smoking ruins of the farmstead at Waters Meeting, trying to straighten his dead mother's clothing. Ribaud knew the child had witnessed his father's torture, his mother's rape, and the slaughter of both at the hands of the Ronin who had raided the farm.

It still seemed like a miracle that the boy had escaped the Madness. Those few who survived the Ronin were always mad. Death was usually a kindness. Yet that small boy had not only survived, but had somehow retained his sanity. Oh, true, true, rage and madness lurked deep in his eyes. Yet it was not *the* Madness. It was something deep within him, shackled and hidden away in the dark place at the center of his being, not something brought on by the Mushin. It was a madness and rage he owned and controlled so well even the Mushin could not sniff it out.

The routine details out of the way, Ribaud pondered what else he ought say. He knew he should give the lad some sort of advice, for Audience was not without its peril. Men had been known to break in the presence of the Grandfather. And the Mushin hovered constantly, waiting for just such a break to swoop down and bring the Madness.

Not that Ribaud was really worried about Jerome. The lad Controlled his mind very well. Perhaps better than any other Son in the Brotherhood. At times he felt the young man's control was a little too rigid, too brittle, but there was no question it was effective. Still in all, the Sword Master felt a vague, gnawing worry over the idea of Jerome facing the Grandfather. He must do the best he could by the lad.

"Now, my Son, listen as you've never listened before." Jerome looked up, surprised by the Sword Master's sudden urgency.

"You go to face the Grandfather,

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not some Brother, or even a Father. The Grandfather. Remember: no matter how benevolent his rule, *he is alien*. Never, never think you can deal with him as you would with another human."

The Sword Master paused for a moment to gather his thoughts and then continued. "I know you've heard the story a thousand times, but hear it again, so that it will be foremost in your awareness during your Audience.

* * *

"Mankind came to Kensho on the Arks," Ribaud began. "Like all the Great Pilgrimages that left the Mother World to spread our kind throughout the Galaxy, the Colonists were a polyglot group representing the myriad ways of thought and life found on Earth. The leader of this group was Admiral Nakamura, a High Master of the Universal Way of Zen.

"When the Admiral found this planet there was great rejoicing. It was beautiful. An Eden. Three probe surveys showed a virgin planet with no sign of higher life, no mark of civilization, nothing but a primeval wilderness so enthralling that Nakamura named it "Kensho," after the first stage of Enlightenment.

"Then the Colonists were landed at First Touch—and all hell broke loose. Everyone went mad, tearing at each other, murdering, maiming. Like vicious, wild animals. It was the Madness. It blew the Colony apart and scattered the raving, killing debris across the landscape.

"For most of the Colonists, there was no way to fight back. They didn't even know what caused the Madness. All they knew was that any emotion, especially a strong one like fear or anger, would grow and grow until it overflowed the mind and drove it into raving Madness.

"Imagine what it must have been like! Anything could set it off. The man sitting next to you at dinner might accidently bump you with his elbow. If the sudden flash of annoyance you felt wasn't instantly brought under control, it would grow and grow uncontrollably until it became a towering, unreasoning, murderous rage.

"Now we know it was the Mushin. We know they feed on our emotions. They use some kind of feedback technique to make the emotions stronger and stronger in an ever increasing spiral so that there is more emotive energy, more food for their insatiable appetites.

"The Mushin brought the Madness down, drove Mankind insane, and very nearly wiped us out on Kensho.

"But not quite, not quite. A few resisted. Admiral Nakmura, along with some other members of the crew who were adepts of the Way of Zen, held out against the onslaught of the Mushin. Together

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they formed a small core of calmness which managed to envelope and save many of the saner and subdue numbers of the insane. The leaders of the group began to make plans for the evacuation of the survivors.

"Before the plan could be completed, Admiral Nakamura disappeared. For several days the others toiled to hold the little group of survivors together, but without Nakamura's leadership they began to lose ground. Evacuation was out of the question. Even survival looked doubtful.

"Then the Grandfathers appeared. From somewhere. From nowhere. We don't know. But they came. And they brought the Way of Passivity. They said the Way had come from the mind of Admiral Nakamura whom they had found dying from an accident. They said they had taken his profound knowledge of the Way of Zen and tailored it to meet Mankind's needs here on Kensho, and that we had to accept it if we were to fend off the Mushin and survive. That we must learn to control our minds and emotions through spiritual exercises and physical disciplines: only with the Way of Passivity would life on Kensho be possible.

"With a little training in its techniques a small group, say a family, might live in harmony on an isolated farmstead. With more training as many as seventy might dwell together as we do here at the Brotherhood. True, in either place the Mushin hover invisibly, ready in an instant to swoop down and feed, but the Passivity is our shield and keeps them from finding a target and bringing down the Madness.

"We owe our very existence to the Grandfathers, Jerome. They have become our benefactors, our leaders. We cannot question the rightness of their actions or their decisions.

"Yet now, against all advice, you go to ask the Grandfather to allow you to leave the Brotherhood to follow the Way of the Sword. Even though you know the Sword is nothing but a way-station, a training device to prepare you to follow the Way of Passivity, the Ultimate Path given by the Grandfathers for all men to follow here on Kensho. You say it is not enough, that there must be more. By so doing you challenge not only the authority of the Grandfathers, but the experience of seven generations of Mankind on Kensho.

"I know, Father, I know," Jerome interrupted so gently that it almost seemed like a continuation of the older man's monologue. "I don't question that the Way of Passivity was probably the best defense we could organize at the time. We're indebted to the Grandfathers for showing us the Way. "But is defense enough? For seven generations we've defended ourselves. We've never struck back. How can we? We don't know anything about the enemy. Only what the Grand-

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fathers tell us, which is virtually nothing.

"What has passivity gained us? A degree of safety and peace. Or better yet, safety and stagnation." The older man opened his mouth to object, but Jerome hurried on. "Yes, stagnation! Look, Father, how many new Brotherhoods have been built in your lifetime? How many new farmsteads have been founded? None! Not one. In fact, some, like ours at Waters Meeting, aren't even occupied any longer." A look of remembered pain flicked momentarily in the black depths of Jerome's eyes like the barely visible tail of a fish at the bottom of a pond. Just the barest movement. Then it was gone, instantly slammed behind the iron wall of his control.

"It's as if . . . as if . . ." For a moment the young man groped for an idea just at the edge of understanding. Finding it, he rushed in pursuit. "Yes! It's as if we've reached some optimum level, some point the Grandfathers don't want us to pass. We're like cattle, penned up in the Brotherhoods or on the farmsteads, completely domesticated and unable to roam the surface of the planet we came to colonize; unable to grow. Instead, we're kept safe and stagnant, cowering under the watchful eyes of the Grandfathers, controlled by the Way of Passivity, defending ourselves against an enemy we can't see and don't understand.

"Father, when the path you're on leads nowhere, you must seek a new path. The Way of Passivity gives us survival—but it leads nowhere. We must find a *new* way, a way to fight back, to strike out at the things which keep us hiding like frightened cattle in the safe little pens the Grandfathers have built for us.

"I don't know the answer. I don't know what the path should be. But I feel the Way of the Sword may have something to offer, something the Way of Passivity is lacking. I don't know. Unless I have a chance to follow the Way of the Sword, I never will know. All I ask is that chance."

Ribaud shook his head with weary sadness. "Jerome, my Son, at times wanting must give way to acceptance." Jerome made to reply but the Sword Master held up his hand. "The Way of the Sword, followed to the end, leads to the Madness. Look at the Ronin, boy, look at the mad animals that slaughtered your family. Didn't they carry Swords?

"Jerome, the Grandfathers are right, even though you are too young to see it. All young men have strong emotions. And you have reasons to harbor the strongest of all: hate. You control it well; indeed, far beyond what one has a right to expect in one so young. But you have boundless energy and boundless ambition. The Brotherhood is hard on you. It is a kinder

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life for softer men. But there is no other way for humanity here on Kensho. The Madness lies in wait on any other path."

Even as he uttered the words, Ribaud felt their utter futility. The lad would not listen, indeed could not listen without doing violence to his own character. And the Grandfather would never allow him to leave the Brotherhood to follow the Way of the Sword. Even though there was truth to what Jerome said, the results of the coming Audience could only be tragic.

Jerome looked down and dug at the dust with his toes. "I know," he began in a normal voice. Then, dropping to a hoarse whisper he continued, "But it means so much to me, Father, so much."

The Sword Master, suddenly realized that he was beyond his depth, that he was now treading into the dark recesses of Jerome's desire and need.

Dangerous, he thought, to stir up such ghosts and specters in one who goes to Audience.

Ribaud shook his head. It was time to stop, to calm, to support, to say somthing, anything, that might help. So little I can do, he fretted, so little I can say that has any meaning. He felt the leaden weight of his inability to offer anything but platitudes. In truth he knew nothing of this complex creature that stood before him. Nothing but the surface. All he could do was to speak to that surface.

Ribaud shook his head in defeat. "Go," he quietly commanded Jerome. "Go to the Grandfather and listen to what he doesn't say as carefully as to what he says. He may speak in what sounds to you like riddles. He may not speak at all. If the first, look for meaning beyond words. If the second, listen to the eloquence of the silence. I can offer nothing more."

Bowing low, Jerome turned and began walking in the direction of the Grandfather's cell.

II.

In each of the Brotherhoods, at its very center, stands a small, windowless building. There is a single, low door in it, facing south. The door is always crudely made of planks from a Ko tree. Inside, the single room is bare except for a mat, woven from the bark of the same tree, rectangular, beginning at the back wall of the room and ending just short of the door. Sitting on the mat, a little over half way to the wall is the Grandfather.

Once a Grandfather gathers a group of men together and forms a Brotherhood, once the cell has been built, the alien stays there, sitting. He never leaves the cell, never even moves, as far as anyone can tell. Occasionally the creature says something in his high, whispery voice. One of his black-clad Messengers then hastens to do his bidding.

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Yet somehow the Grandfather is the heart and soul of a Brotherhood. All important decisions are referred to him, even though he often fails to reply to a question and as often as not when he does reply, his utterances are unintelligible. Nevertheless, each is carefully taken down and religiously studied by the Fathers until it inspires a decision.

On the north, east, and west of the alien Grandfather's cell are the long, low buildings which house the human Fathers. To the south lies the Meditation Hall, a roof supported by pillars. Beyond the Father's quarters are the Workshops and the Rooms of Learning. Further yet toward the walls are the practice yards for the Way of the Sword, the Way of the Fist, and the Way of the Staff. Below the Sitting Hall, to the south, is the practice yard for the Soft Way. Beyond that squats the low form of the Refectory with its long tables and hot, steamy kitchens. Built into the walls which enclose the Brotherhood are stables and pens for the animals and the tiny cells where the Novices and Sons dwell. A tidy community of seventy humans and one alien.

As Jerome approached the Grandfather's cell, he tried to picture the alien. He had seen him only once, the day he had been dedicated to the Brotherhood as a Novice. As an orphan, he had been required to present himself to the Grandfather for approval. He could remember little but the creature's huge, glowing, multifaceted eyes. The rest was mainly a memory of shadow, vague bulk, and an occasional sharp angle. By rumor, of course, he knew a great deal more. The angles had been the alien's stick-like arms and legs: the legs folded in front; the arms, elbows out, resting on the knees. Bulk was the large barrel chest, covered with a hard, chitinous substance rather like the armour they sometimes wore during sword practice. The head was long and narrow, domed at top and coming to a point at the bottom. Large eyes bisected it. Overall, the effect was of a large, benevolent cockroach: a cockroach that talked, and thought, and meditated, and ruled a community of seventy humans, but never, never left his cell.

A Messenger, probably the same one, stood by the door, his face averted in respect. As Jerome approached, the lad pulled back the door, letting a splash of light drop into the darkness of the room. Stooping, Jerome entered. The door swung shut and night fell.

For a few moments he stood still, his back to the door. Silently he repeated the Litany of Passivity to calm his thumping heart. "Moons, moons, shining down on waters, waters, moving slowly, moons moving slowly, yet being still. Still the waters, still the moons. Movement, strife, all longing is but a reflection, passing to stillness when the mind is calmed." He droned through it three times while his eyes adjusted

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to the dark and he gained enough presence of mind to sit down on his end of the Ko mat.

He sat, legs crossed, hands on his knees, eyes cast down about five feet in front of himself, seeing-but-not-seeing. He regulated his breath. And waited.

And waited.

And waited.

An incalculable age later there came a rising whisper, a breeze of meaning that gently blew toward him across the dark. "why this subsection of unity now in this place, interrogation."

Jerome, lulled by the long wait, snapped his mind back into focus. "This subsection of unity has a request," he whispered back.

"Make request apparent to this vessel of totality," came the softly hissing answer.

"This subsection of unity wishes to go to the Old Master on the Mountain to follow the Way of the Sword."

Emotion surged up, threatening to overwhelm the controls Jerome had spent so many years constructing. The Sword! How much it meant to him! As a child he had never even thought of the Sword, never even seen one, for that matter. He was a farmer's son, wed to the land.

But then the Sword had come unbidden into his life, shattering and smashing it into dead, lifeless, bloodsoaked fragments. The Sword of Death, brought by the three Ronin, flashing up, flashing down, cutting, gutting. Three Ronin, men who did not fear the Madness, but who actively sought it out, who invited the Mushin to take over their minds, who reveled in rapine, slaughter, insanity. Three Ronin, three Swords, slashing his life to ribbons, bringing death, death, death.

What demons the Sword had raised only the Sword could lay to rest. Only the Sword of Life could give back what the Sword of Death had taken. The Sword giveth and the Sword taketh away. So be it. Even at seven years of age he had realized that. He had known it deeply, organically, without logic, without words, without even thought. Only by mastering what had destroyed his life could he hope to recreate his life. The Sword had started him on this road. Only by the Sword could he reach his destined end. And somewhere, someway, he would meet the Three and complete the cycle of Death and Life, Life and Death.

When he had come to the Brotherhood, he had thrown himself into his studies with an intensity that had worried the Fathers. In exhaustion he had found release from the demonic visions and memories which constantly lurked in the shadows at the edge of his conscious mind. In the Spiritual Exercises and the Physical Disciplines he had found a way to build an iron wall of control around the turbulent passions and fears that dwelt in the dark center of his being.

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Relentlessly he had worked and prepared until as a Sixth Level Son he had been allowed to enter the Way of the Sword with Father Ribaud. Once on the Way, he had redoubled his efforts. With cold fury he practiced each cut, each block, each move, each form until exhaustion felled him. After a short rest, he came back for more. In five years he had learned everything Father Ribaud had to teach. Jerome's technique was flawless, his form polished like glasswood. A perfect machine, all he lacked was the soul, the True Understanding of the Way of the Sword as opposed to the Technique of the Sword. Ribaud had tried to show Jerome the Way. But Ribaud himself was only the Sword Master at an out-of-the-way Brotherhood. He was not a True Master of the Way, not an Enlightened One. He could point out the Path, but had never trodden it himself. He could not lead Jerome on the Way. He could only indicate the general direction in which it lay. Ribaud knew his limitations and made no bones about it. Jerome knew too, and also knew that there could be no further progress toward his goal unless he found a True Master to study with.

There was such a Master on the Mountain. Known only as the Old Master, he lived in a tiny hut, far up the slopes of the towering Mountain. Years ago, when the Old Master had first appeared in the region, he had singlehandedly wiped out a band of eight Ronin which the Brotherhood had been unable to kill or drive away. Then he settled on the slopes of the Mountain. At first, he had grudgingly accepted a few students from the Brotherhood. As a Fifth Level Son, the young Ribaud had been among them. On the Mountain he had caught just a glimpse of the Real Way, a single Satori experience. He still spoke of the experience with reverence and awe.

Then the Grandfather had handed down a decision. It was very clear, very precise. No one was to go study the Way of the Sword with the Old Master on the Mountain. The Way of the Sword was too active, too dangerous to Passivity. It was a training vehicle, a waystation on the path to Passivity and a technique to fend off the Ronin. Nothing more.

That was thirty years ago. Since then hardly anyone had seen the Old Master, though from time to time the Brotherhood's patrols had found the bodies of groups of Ronin, so it was assumed the old man was still alive. Yet the fact remained that for thirty years no one has gone to study the Way of the Sword with the Old Master.

But Jerome knew he had to try. It was the only way, his only hope! The Grandfather must allow him to go, must not stand in the way of his destiny!

But calm! He must remain calm! To draw down Mushin in the Very

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presence of the Grandfather! Even a Novice wouldn't do anything so foolish, so indicative of a lack of control and a straying from the Way of Passivity. "Moons, moons, shining down . . ." he chanted silently, forcing down the emotions, the hopes, forcing his entire being back down, down, into a tiny, windowless cell at the center of his soul.

Silence.

And waiting.

Then, eventually, the darkness began to vibrate again. Muffled meaning softly filtered through the black of the cell to his straining ears. It was a chant. One he had never heard before:

The Sword is the Mind.
When the Mind is right, the Sword is right.
When the Mind is not right, the Sword is not right.
He who would study the Way of the Sword must first study his Mind.

Again and again the Grandfather repeated the chant, his hissing rising and falling. At times his voice seemed to fill the cell, pushing back the darkness. At other times it shrank to a tiny spark almost overwhelmed by the endless night around them. The chant wound its way into Jerome's mind, down into his soul, curling, twisting like a tiny snake of smoke coming from a fire one had thought was extinguished. Slowly it filled his whole being, until it seemed there was no more room for him inside himself.

Control! Control! He had to regain control! Raised from childhood to fear the Mushin, Jerome was terrified at the very thought of anyone or anything tampering with the carefully constructed fabric of his mind control. For generations, loss of control had meant the Mushin gained control, bringing the Madness that had so nearly destroyed the human race on Kensho.

Now Jerome fought back desperately, instinctively. He closed down his mind. Slowly, agonizingly slowly, he retreated back into the hard, dark core of his being. He shut out the curling chant with its meaning beyond words, he fought to reintegrate himself as a separate entity, to cut himself off from external influence.

Panting, sweating harder than he ever had in the practice yard, Jerome gradually brought himself under control again. Deep within him a huge rage burned, shielded from the Mushin by the black walls of his being. But it burned fiercely all the same.

The Grandfather! The alien had done this to him! Had tried to take over his mind! The Grandfather could do things to his mind! It could do things like the Mushin could do!

Anger, confusion, rage, fear, all contained, all held deep within, fused together in a sudden intuitive leap. The Grandfather and the Mushin! Somehow they were linked, related! The benefactor of

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the race and its worst enemy were somehow tied together!

Revulsion and disgust rose up and twisted into hatred, joining the other emotions that raged within him. For an instant blind fury and hate spewed across Jerome's mind like a leaping wall of brilliant flame. The explosion was incredible. In one motion he stood and took a single step toward the Grandfather. Almost swifter than thought his hand rose and fell in a swift arc, striking at the base of the alien's neck.

With a sharp snap the head flew off and smashed against the wall of the cell.

The entire universe stood still. Frozen, his mouth agape, Jerome stood, looking at the crumpled, broken head that lay at the base of the wall. His emotions, his incredible raging fury, were gone, sucked into the cold void of eternity.

Then, in the next instant, the frozen, fragile universe shattered like thin crystal and crashed down upon his head. His mind a blank, Jerome tottered and crumpled to the floor.

III.

Consciousness returned slowly, like an old man dragging himself up a steep flight of stairs. For a while Jerome simply lay there, enjoying the solidity of the floor and the texture of the Ko mat against his cheek. Then memory began to seep through the hazy curtains of his confusion. His hand crept softly across his face to brush away the last fogginess and his eyes opened.

Jerome sat up and looked at the Grandfather. The alien's body still sat at the other end of the Ko mat. Over by the wall lay its shattered head.

Memory changed from a seeping to a sweeping flood. Jerome braced himself against it and the first wave broke harmlessly against the walls of his control. Gradually he allowed memory to percolate down through the layers of his mind. As it sank to the core of his being a thought rose to meet and pass it by on the way to consciousness. "I have killed a Grandfather," he whispered. "I have killed a Grandfather."

Hearing the sound of his own voice gave the thought a solidity that made it possible for him to grasp and work with it. Carefully he wove it into the framework of thought through which he interpreted the world.

The Way of Passivity taught that Being caused Desiring. Desiring gave rise to Action. Inevitably, Action led to Frustration. And because of the Mushin, Frustration ended in the Madness. The Way was an attempt to cut off this inevitable sequence by practicing Non-action or Passivity. The Spiritual exercises and Physical Disciplines of the Way taught the control necessary to rein in Desire, to enclose it behind an iron wall of rigid Passivity. Action based on personal Desire must be avoided. For one Action always engendered another. And that, in turn,

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brought on another. No single Action could ever satisify Desire once it ruled a man, and so the chain of Desire and Action would lead to Frustration and eventually to the Madness.

Jerome had fallen into just such a sequence when he allowed himself to be ruled by the personal desire to follow the Way of the Sword. His Desire had forced him to the Action of requesting an Audience. And the Audience had led to the Action of killing the Grandfather.

Now more Action was required. Never had he understood the Way of Passivity more clearly. He had acted, and now he must act again. In doing so he was that much closer to the Madness. But he had to act, for he knew he could no longer stay at the Brotherhood. He didn't know what the Fathers would do when they discovered his crime, but his Desire for life made him unwilling to find out. The Fathers didn't exactly worship the Grandfather, but they did revere and obey the alien. Even Father Ribaud looked upon the Grandfathers as Mankind's saviours from the Mushin and the Madness. There could be little doubt that the Fathers would be shocked by what he had done. How shocked, how angered, he could not guess. But it was perfectly possible that in their anger they might lose control and leave an opening for the Mushin to come pouring in. Jerome shuddered inwardly. All the Fathers were Masters of at least one of the Ways. Whether it be the Fist, the Staff, or the Sword, all were deadly. He had no wish to face even one of them possessed by the Madness.

Now he must act again. He must leave the brotherhood. Every thought, every motion, must be geared to the satisfaction of his Desire to leave the Brotherhood. One error, one misstep, and he faced Death.

So. First he had to figure the lay of the land. He listened for some hint of what was happening in the world outside the dark cell. Quiet. Everything was quiet. Which meant no one knew! Surely if any of the Brothers knew he had killed the Grandfather they would be there to take him into custody! So no one knew. Yet.

What was more, there didn't seem to be any Mushin about. He felt with his mind, searching for the telltale tingling sensation they made at the edge of the mind. Again he felt a sense of surpise. Somehow his killing rage had gone undetected by the Mushin as well!

This was food for thought. It was easy to understand how his act had escaped the notice of the Fathers; the Grandfather had no regular attendants, except for the Messengers who came when they were called. Hence there had been no Fathers in the area when the killing had occurred. In addition, he had been swift and silent. But the Mushin, how had his rage escaped the Mushin? Had his sudden collapse after the

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blow somehow saved him? Could a *killing* go undetected by the Mushin?

The Mushin! Icy recollection ran like a swift chill up his spine. Just before he had risen to strike he had seen some kind of a link between the Mushin and the Grandfather. On the face of it, the idea seemed absurd. How could the benefactors of Mankind be linked with their enemies?

And yet . . . and yet . . . there could be no mistaking what the Grandfather had been trying to do. Jerome knew because he had experienced it. The Grandfather had been trying to break down his control, to take over his mind. If the alien had succeeded, Jerome would have been helpless to fend off the Mushin, helpless in the face of the Madness.

Thought followed thought to the place where doubts dwelt. Just what were the Grandfathers? Where had they come from? Why had they saved Mankind from the Mushin? What was in it for them? These were questions all men asked themselves but seldom spoke aloud. Mankind's debt to the grandfathers was too great to allow room for much questioning.

Jerome shook his mind free of the circling doubts. Now was no time for speculation. He had to act. The mystery of the motivations of the Grandfathers and their possible link with the Mushin would have to wait.

He looked at the shape sitting headless at the other end of the Ko mat. The alien had done something to his mind. He couldn't repress a slight shiver.

The thing was dead now, though. It could no longer hurt him. Curiousity grew stronger than fear and he found himself rising and stepping over to examine the upright body. No one had ever had such a chance to examine a Grandfather before.

A shock ran through him.

He stood looking down into an empty husk!

The body was hollow!

There was nothing. No vital organs, no blood, no flesh. Nothing! Dazed, he turned to the wall. A step brought him to the shattered head. He stopped to pick it up: it too was empty. A brittle, empty shell.

So the Grandfathers, like the Mushin, were non-physical, their insect-like shells a mere empty masquerade. *Like* the Mushin? Perhaps the relationship was closer, much closer!

Battered, reeling from shock after shock, Jerome's mind was pushed over the edge, out into space, out where there was no place to stand and fight, out where his iron control meant nothing. He felt reality blasted to the winds of Reality. He had to fall eternally into chaos and Madness or find his wings and fly.

He became unsane. He passed the boundaries of Self and looked back at the pathetic creature which stood in a dark cell and held the crumpled head of a Grandfather in its hand.

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He saw himself with complete objectivity, as he really was. He saw the hollowness of the Alien's shell. And the hollowness of his own.

His shell. His armour. The beloved wall of control he had so carefully and lavishly constructed. It did not enclose some lovely garden, some orderly place that had to be protected against the dangers of the outside world. Within those iron walls there was no calm, no Passivity, nothing to mirror or match the rigid exterior. There was only a vast, foul, seething void of incoherent passion and desire, a cesspool of terror held back by the weakest of restraints.

He knew this was the Truth. The Passivity was shallow, a brittle shell, a lie that gave a smiling face to a snarling beast. It did not go to the core. It simply contained it.

Like a visiting specter, he floated through the agony that filled his Center. He heard again the bellows of his father, writhing in his bonds as three Ronin raped and murdered his mother. Once more he pulled his parents' bodies from the burning house. His fear of the older Sons was there too, as were the fights behind the Refectory, and the drubbings he had had to endure in silence.

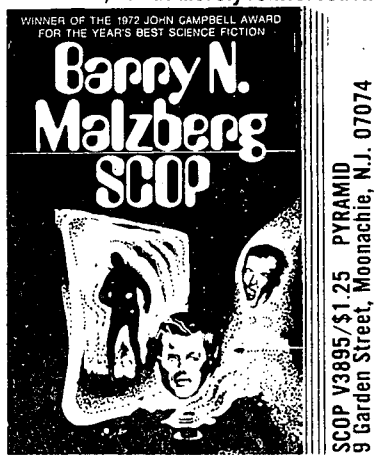
All the anguish of his life was there. All compressed, all repressed behind the control the Passivity taught.

He knew this was the Truth. The Passivity did not do what the Grandfathers claimed. It did not set men free from Desire. Desire was still there, made more intense than ever by being subverted and hidden. The Passivity did not do away with the Frustration caused by Action. It merely changed the nature of the Frustration and locked it behind the iron control of the Spiritual Exercises and Physical Disciplines.

He knew this was the Truth and the Light of it shone brightly on his soul. So bright was the Light that he could see the Way he must follow. A brief, dim glimpse, but a seeing none the less.

The Center must be Calm. The Way of the Passivity did not accomplish this. His Way lay up the path to the clearing on the Mountain where the Old Master sat, waiting.

It is the 21st century, but Scop is in 1963—attending assassinations. He's warned, cajoled, pleaded . . . but he knows he's a failure. Trying to alter the future, he has merely reinforced it!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There he would study the Way of the Sword. There he would seek to calm his Center so that the walls of control were no longer necessary. There he would reach for the Way to set all Mankind on Kensho free of the Grandfathers and free of the Mushin and the Madness. The Light did not show him the end of the Way he must follow. But it showed him the beginning.

Gradually the Light dimmed and he became Brother Jerome, standing in a dark cell with the crumpled head of a Grandfather in his hand. Carefully, almost gently, he placed the head back on the floor, turned and walked softly to the door of the cell.

Now he had to tune his every sense to escape. He no longer feared Action, nor Frustration, nor the Madness. Action was necessary to the following of his Way. He peered out one of the cracks between the planks. He saw nothing. Startled, he realized it was dark. Which meant he must have been sitting with the Grandfather for hours! He pressed his ear to the door, listening for outside activity, for the sound of the bell in the Meditation Hall, for the clash of dishes from the Refectory, for anything that could give him a clue as to what was happening outside.

Nothing. The world was still.

That could only mean it was late at night, long after all the Novices, Sons, and Fathers had finished Evening Sitting and gone to their cells for Final Meditation and Rest. In other words, the Brotherhood was asleep. There were Novices guarding the North and South Ways, of course, but Jerome could avoid them and go over the wall.

Slowly he opened the door outward, its squeak startling him with its loudness. Cautiously he looked around, then stepped out and gently closed the door behind him, wincing at the sound. No one heard. The world remained silent.

A breeze blew across his face, making him suddenly aware he was sweating. He grimaced. I'm afraid, he thought. Scared. Walking softly as he had been trained by the Fist Master, Jerome crossed the Emptiness. He moved South, around the Meditation Hall, hollow and cold in the light of two of Kensho's four moons. Beyond that was the practice yard for the Soft Way. He passed quickly, gently, then turned to the east toward the wall and his own cell.

The breeze blew steadily, cooling his forehead and chasing through his hair. All around him the silence kept watch. Once he heard the ting-ting of the North Way Watch sounding the hour and the South Way Watch responding. It was the second hour. He had been with the Grandfather for at least twelve hours!

At the door of his cell he stopped. Why had he come back here? There was nothing within. Only his bowl, his knife, and a

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spare robe. Oh, yes, and an old, worn pair of sandals.

One more thing, too. One more thing. Something he never admitted he had, never showed to anyone, almost never looked at himself. It was under the straw pallet. He reached under the thin mattress and groped for it.

When his fingers closed over its cool hardness, he drew it forth. It was a small badge, attached to a crudely made chain. His mother had worn it around her neck. He had taken it from her dead body as he sat mourning amid the smoke and stink of the farmstead at Waters Meeting. It was his father's actually, something that had been handed down from father to son ever since the Early Days. Jerome held it up in the beam of moonslight that filtered into his cell from the ventilation slit in the ceiling. He could just make out the words inscribed on the dull surface: "P. Rausch Chief Engineer." He slipped the chain over his head and hid the badge beneath the coarse cloth of his robe.

Moving swiftly now, anxious to leave, he placed the sandals, bowl, knife, and a pair of eating sticks on the spare robe. He folded the bottom up and rolled the whole thing into a tight knot to hold the loose items. A string around the middle assured it wouldn't come apart. Finally he looped the whole thing around one shoulder and across his waist and tied the sleeves in front.

Once outside again, he turned north along the wall and began walking. He passed a few of the Workshops and finally came abreast of the east end of the practice yard where the Way of the Sword was taught. For a moment he paused, then he entered the yard and walked swiftly to the rack where the swords were kept. Fondly he took down his favorite sword, Whistler, and held it lovingly.

For a few moments he stood there gazing at it, experiencing the good memories it awakened of hours sweating in the sun perfecting his stroke and cut. Father Ribaud's presence filled the moonslit yard and Jerome felt a lump in his throat. The old man would be stunned by what had happened. Jerome would give anything to see him one last time, to attempt to explain what had happened, what his revelation had shown, and what path he must now follow. But as much as he loved the Sword Master he realized they could not communicate on certain things, that their views were too widely divergent to make understanding possible. Sympathy, yes. But not true understanding.

He must go his own way now. He would take Father Ribaud with him, in his heart, wherever he went. But the journey itself must be made alone.

And the sword, Whistler, should he take it with him? The world he was entering was dangerous and the sword might make the difference

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between survival and death. He paused only a moment and then returned the sword to the rack.

No, it wasn't right. Not because it would be stealing, but because he knew intuitively that he would have to earn his sword, not just take it. He knew he was increasing his chance of death greatly by not taking the weapon, but that risk was one he had known about when he had decided to walk the Way. Now he was a Seeker of the Way. He would have to find his own sword somewhere on the journey. He bowed to the Shrine of the practice yard and left.

Jerome was now almost to the northeast corner of the wall surrounding the Brotherhood. Here there were some sheds with sloping roofs that were used for the storage of tools. They offered easy access to the top of the wall. Looking around briefly one last time, Jerome began to climb.

IV.

All four moons were up now. From the rise where Jerome stood, he could look back down the valley cut by the Little Water and see both the dark bulk of the Brotherhood and the far-off smudge that marked the site of the farmstead at Waters Meeting. It was as if this life was laid out before him in the moonslight. He turned and looked the other way. In the near foreground the Wood began. Beyond that he could see the dark mass of Mountain and nothing more. That was his future. Dark and unknown.

He turned back to look at the Brotherhood. A great, heavy sadness and sense of inadequacy filled him. I go to find myself and to seek salvation for my race, he thought. One man, one young man, I seek the Way. So great a task for one man.

Yet that was how it had always been, he realized. One man. One man fitting a stone blade to a wooden shaft. One man tying a sinew to a springy twig.

The dark mood lifted and he chuckled. He could just imagine how the Mushin must be trembling at the terrible threat he represented. Much the way the saber-toothed tiger must have trembled at the first man who carried a stone ax. Puny, he thought with a smile. That's what the tiger must have thought. Puny and insignificant. And so he would appear to the Mushin. A joke at best.

But neither the saber-tooth nor any of the other fanged and clawed enemies of early man were laughing any longer. Now it was the Mushin's turn.

He shook his fist at the empty sky. "I go to find a Way," he called out. Only the silence answered him.

With a shrug, the Seeker of the Way turned and strode off under the soft glow of Kensho's moons. ★

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GALAXY BOOKSHELF

Spider Robinson

Millenium, Ben Bova, Random House, 277 pp., $7.95
The Analog Annual, ed. Ben Bova. Pyramid, 256 pp., $1.50
Notes To A Science Fiction Writer, Ben Bova, Scribners, 177 pp., $6.95
Shardik, Richard Adams, Simon & Schuster, 604 pp., $9.95
Triton, Samuel R. Delany, Bantam, 369 pp., $1.95
Doorways In The Sand, Roger Zelazny, Harper & Row, 185 pp., $8.95
Science Fiction Art, Brian Aldiss, Bounty, 128 pp., $9.95
The Best of Robert Silverberg, Pocket Books, 258 pp., $1.95
Tales From The White Hart, Arthur C. Clarke, Ballantine, 150 pp., $1.50
Epoch, ed. Roger Elwood & Robert Silverberg, Berkley Putnam, 623 pp., $10.95

ALL RIGHT, I know: the above list of books has you all goggle-eyed and you can't wait to get to the reviews. Well, you'll just have to wait. I have, God help me, a speech to make.

Along about February I asked you people for feedback on this column. As I write, it's March, and I'm still shoveling my way out from under the deluge of mail that ensued. I've gotten to know quite a few of you, and I've learned that, almost to a man, you are passionate in your likes and dislikes. Nor are

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you reticent about expressing them. A startling number of you asked me things like, "Can you use your influence" (forsooth!) "to get the publishers to stop printing that _____ _____" (supply your own) "stuff and give us some more good old _____?"

Well the hell with that noise. Do it yourself.

You can *too*. Let me tell you about my "influence," people. I can get books free—but the word "free" is a misnomer: I must *read* all those books, and the majority are wretched. I can irritate or gratify those editors who bother to read my column (maybe 5% of the total?), with the sum total effect that such editors will either buy me or omit to buy me a drink the next time I run into them. Likewise the writers involved. The publishers? They don't know that I'm alive, and unless I ever write a *New York Times* Bestseller, they never will.

But there is a way for me to communicate my opinions to all of those people, in a way forceful enough to demand their attention. And that same channel is available to *you*, to every one of you goombahs, if you'll only get up off your hindquarters and use it. I'm not talking about writing letters to the publishers, or holding demonstrations, or sending letter-bombs through the post or forming vigilante committees to hang the hacks from the housetops. I'm talking about the Hugo Awards.

You take a fine thoughtful writer like George R.R. Martin. Years of a story here, a story there, and I'm sorry but that deal for your anthology just fell through. Then the man wins a (thoroughly deserved) Hugo for "A Song For Lya," and all of a sudden *New Voices* Volume One is scheduled for release and people are falling over themselves to buy George's first novel *After The Festival* (George's very words). Or take a fine thoughtful writer like *me*: I'm here to tell you that it got a lot easier to sell a novel to a house like Putnam when the Hugo-voters at Discon II voted me the John W. Campbell Award for Best New Writer back in 1974 (in a tie, I must add, with the highly talented and too-seldom-seen Lisa Tuttle). The point is, the voice of the people was heard in the land, and it helped the people get the books they wanted to see.

But I'd hate to tell you the actual number of votes I received, or the number that *any* Hugo or Hugo-related award winner gets. At last year's World Science Fiction Convention, the awarding of the label *World's Best* was done by *less than six hundred people*.

I've received more *letters* than that, from you feedbackers.

I know the damn thing was held halfway around the world; that's entirely irrelevant.

You don't have to attend a Worldcon to vote. Anyone can. Anyone—anyone in the world. You

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don't have to have credentials or be vaccinated or even have the money to drag your ass to Kansas City for *this* year's jamboree to make your feelings known. It'll cost you six bucks, two postage stamps, and a little time.

You write to MidAmeriCon, the 34th World Science Fiction Convention, P.O. Box 221, Kansas City, Missouri 64141, and you tell 'em you want a supporting membership, and you slip 'em six bucks U.S. This bread is used for about a million things that taken together make a convention happen, from paying us pros to bullshit, to paying the poor sad bastards who're going to have to count your ballots. In return you get probably a bunch of literature, a tin-plated Mars bar, the hearty thanks of a convention committee that came out in the black after all, AND the right to cast your vote for the Hugo Awards.

But only if you hurry.

Dammit, here's where that time-lag between the writing of these columns and their seeing print really hurts. As of today, March 22, I have not yet received even my *preliminary* Hugo ballot, the mass of suggestions which will, after months of deletions and write-ins, become the Final Ballot. But by the time you read this, that ballot will already have been selected, and they might not even have time to mail you a copy in time for you to vote on it—I don't know just what their deadline is going to be, but you'll be reading this in June or July, which is mighty close to Labor Day. So you're going to have to put out a little juice on your own to find out who the finalists are, and dammit, you should be interested enough. You can always write-in something.

I heard you. You, the cheapskate who just said, "Six *bucks*? Jeez."

Well, don't gimme any of that jive. From the mail I've been getting, it's apparent that the vast majority of you spend more than six dollars a month buying science fiction, and end up feeling ripped off more often than not. You are indignant; you want me to do something about it.

Phooey—spend one month's six bucks on improving the overall quality of *next* year's sf. The return on your investment will be literally priceless.

And *next* year you can even get it together in time to influence the composition of the Final Ballot.

Editor's note: due to a delay in publication this issue will be reaching the stands sometime after the Final Balloting for 1976. However everything Spider says holds true for 1977; and you can get in at the beginning. Write to SUNCON (the 35th World Science Fiction Convention, or WORLDCON '77), P.O. Box 3427, Cherry Hill, NJ 08002 for your application for full or supporting membership.

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Make your wishes known, people. For too long the awards have been given by too few hardcore devotees: tell the nice publishers what you want.

* * *

I ALSO GOT a couple of letters from people who said, "I wish Galaxy would stop making snide cracks about 'that Other magazine, the one with rivets.' Such rivalry is unbecoming," etc. These good people have entirely missed the point. There is no animosity between GALAXY and ANALOG: aside from liking each other, Baen and Bova are too damned sensible—they understand that science fiction just doesn't work that way. You can't climb over the backstabbed bodies of your adversaries—there aren't any.

For those of you who are still dubious (man, the world has never *seen* an Age of Cynicism till now), here I am in the pages of GALAXY saying that Ben Bova has just written the 1976 Hugo Award Novel.

At least he's sure and hell got my vote so far. Granted, the year is young—but it'll be mighty damn hard to beat this one. *Millenium* is the crowning achievement of Ben's career to date, and enthusiastically praised by the likes of Isaac Asimov and Lester Del Rey, has already sold to Ballantine for paperback, and I want to tell you I haven't enjoyed a book so much in years. It is one of those rarities, a good science fiction book that is also a good novel in the literary sense.

It is the story of the apotheosis of Chester Arthur Kinsman, the man Ben's been writing about for most of his adult life, and it does both men proud. *Millenium* concerns the political state of affairs on Earth and the Moon in the year 1999, a time when the Cold War between America and Russia has been thawed and reheated, *damned* near the boiling point. At any moment, one side or the other may complete its network of ABM satellites, upsetting at last the precious Balance of Terror and precipitating nuclear calamity—in fact, they may not even wait that long. Caught on the horns of this dilemma are Kinsman and Piotr Leonov, commanders of the American and Russian bases on the Moon. These bases were established back when both sides were getting along amicably—and now that their respective countries are being hostile again, Kinsman and Leonov are dismayed to realize that they must become enemies. Can they refuse? And get away with it? Therein lies the story, and a helluva plausible one, too. I won't give any more away: there are some *lovely* surprises planted.

The book builds steadily and inexorably to a stunning conclusion, with one of the most moving final paragraphs in my memory, and along the way is one of the most

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sheerly believable stories in science fiction. I'm not saying that 1999 will turn out as Ben pictures it—but I *do* say that it damned well could—and that we'll probably be very lucky if it does. Oh yeah: Harry Harrison is in the book too, in the thinnest of disguises, as brilliant and charming and disreputable as he is in real life.

I understand Fred Pohl has a novel coming out that's a strong Hugo contender, but as of now *Millenium* is my firm recommendation for Best Novel of 1976 (for those of you who're heeding my advice about voting, remember that you vote for the '76 Hugos in 1977, not this year), and I strongly exhort you not to wait for it to come out in paperback. This is one of the few books that I feel *is* worth $7.95, no matter *what* the hell shape your budget's in.

* * *

NEXT ON THE agenda is a peachy original anthology; and the editor is the selfsame Ben Bova. And like *Millenium*, *The Analog Annual* is predicated on a careful analysis of current trends in the real world.

The statistics boys will tell you, if you hadn't noticed already, that there's a vast number of new readers of sf—we've never had so large an audience in all of history. And it is sad but true that a large and growing number of these new "fans" (they may not trade fanzines or attend cons, but they put oil in my Dodge) are only peripherally aware or not aware atall that there are *magazines* that print the stuff every month—folks who get their sf from the bookrack or not at all. There may have been a time when the overall quality of "book" sf was higher than that of "mag" sf, but if so I'm here to tell you them days is gone forever. Unless you're wise enough to read my column, your chances of getting a good original collection are, by *my* statistics, lower than your chances of getting a good given issue of GALAXY or ANALOG or *F&SF*. Much lower, in fact: you can get an idea of the *kind* of stories Jim or Ben or Ed is liable to assemble—but who the hell knows what Roger Elwood's going to do next time?

So Ben decided to alert the paperback buyers to the existence of magazine sf, by producing a "Thirteenth ANALOG" in paperback format. Not surprisingly, the dice are loaded: if every ANALOG were this good, there wouldn't be enough paper in the world to meet the demand.

Look: it's like I said a couple of paragraphs ago, each of the so-called Big Four editors has a sort of style that can be sensed, based on the audience he has decided to aim at. Ben *tends* to buy more technologically-oriented stories whereas Jim *tends* to buy more humanistically inclined stories whereas

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Ed Ferman at *F&SF tends* to buy more "Lit'rate" pieces whether or not they are actual stories whereas Ted White *tends* to buy whatever the first three rejected. These glib generalizations, of course, have about as many exceptions as the geocentric universe theory: Ben has bought stories from me that are about as technological as a pair of scissors; Jim has bought the only technological story I ever wrote, and Ferman and White have printed many fine, readable stories—but the above is how the Big Four are sort of filed in my subconscious as of even date.

So what Ben put together is a book that should satisfy just about everybody.

Story One is a complete short novel (a sadly neglected form—by the writers who could do it right, that is) by P.J. Plauger. When Plauger won the John W. Campbell Award for 1975, the only story of his that I could call to mind was "Wet Blanket," so I've been eager to see something more. *Fighting Madness* will do just fine, an absorbing novel with a Gordy-Dicksonish flavor to it that means an extremely high level of craftsmanship for so new a writer. Plauger shows magnificent promise. I'd like to see a more ambitious theme next time, but I believed in the protagonist and cared what happened to him and that, in the final analysis, will get my penny every time.

Story Two is "Malf," a yarn which should satisfy the technology freaks and certainly satisfied me. It's in the tradition of "Killdozer" and Keith Laumer's Bolo Combat Unit cycle: the Bigass Machine Gone Berserk story. Except that there's a human operator—and *he's* the one that's berserk. A fine, tight, fast-paced adventure with a "read me" style: I've never heard of Ing before, but I hope I do again, soon.

Story Four is "The Tower of Ashes" by Hugo Award winner George Railroad Martin, a story literary enough to satisfy the New Wavers (right down to the "Whadhesay?" ending) and rich enough to satisfy me. It reminds me of something Poul Anderson might have done, grabbing at your heart in a way that is getting to be George's trademark too, lately. It features his usual striking visual sense as well.

Story Five isn't a story—this is a typical ANALOG, remember? It's a Science Fact Article (which ANALOG gets free-lance, not having a Jerry Pournelle), this time by Dr. John R. Gribbin, co-author of *The Jupiter Effect* (a controversial Vintage paperback concerning earthquakes and the planets), holder of a doctorate in astrophysics from Cambridge, etcetera. "The Climatic Threat" gives a well-researched and thoughtful answer to the question, "Are we liable to go into a new Ice Age in the foreseeable future?", and diminished my ignorance considerably. And painlessly.

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And for those of you who are wondering what happened to Story Three, I'm afraid my rigid code of professional ethics prevents me from saying anything more than that it's the funniest thing I ever wrote and was originally rejected on the grounds that *Playboy* would pay me more money for it (no they wouldn't either) and besides, I don't get a penny in royalties anyway, so there. It is, by the way, as far as I know the only story in history with one and a half protagonists, and it's called "Half An Oaf" which is certainly better than a nun.

* * *

And still I'm not done with Ben Bova.

But the appeal of this one won't be so catholic. In fact, it's liable to be one of the most controversial books of the year. I know of at least three people, in and out of the profession, who were rendered speechless with rage by it—and as many who said it made them cheer out loud.

Because, of course, it's mistitled. It should be *Notes To An* Analog *Writer, Slushpile Division,* as Ben cheerfully admits in his preface. "This book was written in self-defense," is literally the first thing he has to say. Ben is the only magazine editor I know who reads *every manuscript* submitted to him, an incredible task that you couldn't get me to attempt for all the tea in Acupulco. So what he has written here is *NOT* How To Write A

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Good Story or What A Good Story Is or What SF Consists Of. It *is* How To Not Get a Story Bounced At ANALOG Out Of Hand.

Given five minutes you can probably come up with a half dozen Hugo or Nebula Award Winners that ignore or defy the conventions Ben describes in *Notes:* none of them are by slushpile writers. Many writers and fans will flatly reject Ben's notion of what constitutes a publishable story: none of them are published in ANALOG. I've read several fanzine writers who blast *Notes* for its failure to be an exhaustive guide on how to survive as a writer: none of them, apparently, read the Preface.

And by damn, the rules Ben lays down seem sound to me. There are gems of editorial insight for the tyro, classic pitfalls delineated by one of the men who's seen 'em all. Ben points out, for instance, that to work a story must center around a conflict—and that *slam-bang action is not conflict.* He also urges the beginner to write about what he knows about—new writers shouldn't bluff. That's why my first stories were about drink.

Enough. The avant garde will doubtless castigate this book—but it strikes me that people as diverse as Robert Heinlein and William Shakespeare told their stories by these rules, and I believe both of those gentlemen made a living.

* * *

Now for a book I'm going to devote a good deal of space to. It's only fair: it took up an inordinate chunk of my reading time.

Shardik is no bigger than the complete five-borough New York City phonebook, if you add in the Cross-Indices by number and address (the one only cops and politicians get). And Richard Adams is pretty heavy too.

Yep, the same Adams as wrote *Watership Down,* who "achieved Tolkienian stature" with his first novel, back again with a massive work about twice as good as the last one. And easily twice as long. It's much more ambitious in theme and scope, with a profundity that *Watership* lacked and broader allegorical relevance. It concerns the spiritual odyssey undergone by one man during his transition from simple hunter to Emperor of Bekla to . . . no, I won't spoil it. It is the story of the maturing process he undergoes in his attempt to grasp and manifest the Will of God. It is also the story of religious and political upheaval on a broad scale.

I found it an exhausting but satisfying book. It was difficult to get through the first two hundred pages (there are over six hundred)—not that it wasn't well-written or that it started jerkily—but Adams has a tendency to never use one simile where three will do, and I was quite a while convincing myself that the sheer effort of wading through all those words was going to be rewarding enough. He paints his pictures with such verbose precision, so much wordy fine tuning of nuance

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and evocation, such careful overstatement, so much defining and redefining, such insistence on being more unnecessarily redundant than is absolutely necessary, so much . . . I think you get the idea. About half the sentences in the book begin with "As . . ." and meander along for whole paragraphs before they even get as far as, ". . . so, therefore, did . . ."

On the other hand, they *are* richly evocative similes for the most part. There's just so damned many of them.

So okay, the man could have used an editor—but how do you go about convincing a guy who has raves from both *Times*es and virtually every book-reviewer covering English-language novels that he needs to prune off about forty or fifty thousand words? And as it stands *Shardik* is a mighty fine book, less a case of too much fat than one of too much red meat.

My only other major objection is that Adams's allegory strained my credibility just a bit. Look, the book centers around the heroic figure of Shardik himself, an incredibly enormous and terrible bear who wanders out of the forest one day to alter irrevocably the lives and destinies of everyone within five thousand miles—but the manner of his doing so was just a little too pat and contrived. No single thing that he did was implausible on the face of it—but taken together, they advance Adams's plot just a little too conveniently to ring true.

Unless—and this is a big unless—you're willing to concede that Shardik just might be what the Ortelgans mistake him for: the Power of God incarnate.

Adams comes across as a man who may have yet to learn fully the discipline of his craft, but already shows the vision and style of a potential master. I feel it's a terrible shame that the vicissitudes of his life and his lionizing critics have prevented him from having an apprenticeship. *Shardik* is an ever-so-slightly flawed masterpiece—and it could have been a perfect book.

But damn, he writes well.

And don't be misled by the fact that his last book was about rabbits; this man writes with plenty muscle when he wants to, with the kind of impact that only the heavyweights like Brunner and Bester and Sturgeon and MacDonald can pull off, that "unexpected body-blow" kind of delivery that makes you re-read some sentences four times over before going on.

Also his characterization is excellent: I believed in and cared about virtually every character in the book, including the bear—even if the love-interest subplot did seem a bit perfunctory and afterthoughtish. Kelderek Play-With-The-Children is a master's creation, and so is the Tuginda, and so is the Ban of Sarkid, and so is the ghastly forced march of the child slaves which forces the book toward its powerful ending.

I wish I could recommend the pa-

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perback, but whoever publishes same has omitted to send me a review copy. [*Pocket Books.—Ed.*] Do what I did: go to the library. Considering its mass, though, the hardcover is something of a bargain at a sawbuck.

Wait'll you see *next* year's prices.

(I saw a forty cent paperback last week. Brand new, honest to god. *Forty cents*. The proprietor of the bookstore was as flabbergasted as I was; he refused to part with it. "I'm going to keep it on the wall there," he said, "and just look at it now and then.")

* * *

And so, in our continuing coverage of the Veddy Best in Literature, we come to Samuel R. Delany's latest novel, *Triton*. I'm happy to say that it isn't as opaque as *Dhalgren*, but I'm sorry to say that it too bored the pants off me.

But I must point out that that's a purely subjective judgment on my part. A good friend of mine describes *Triton* as "a fascinating character-study of a man whose basic assumptions prevent him from relating successfully to those around him," and I can't disagree with that. What it most certainly is *not* is a story, or a science fiction novel.

Oh, there are science fictional trappings. But they're about as genuine as those on the paperback's cover: a collection of objects which taken together are supposed to be an artifically maintained city-state on Triton, with Neptune looming large in the background. Examine the hardware closely: the "city" is composed of two queens, a bishop and three pawns; a vanity mirror, a Neosynephrine squeeze bottle, a hose coupling, a resealer for pop-top soda bottles, an oil-squirter can, a pipe-rack identical to the one I bought my Dad ten years ago for Christmas, and a throwing dart impaled on a resistor. Don't believe me, go take a look. "Neptune" too is way off, with no clouds and a girdle of craters.

The world-of-the-future that Delany creates seems to me utterly unrelieved decadence, although there are hints that a few offstage characters on Earth (if not Triton) might be genuinely alive. There appears to be no meaningful work to do, and curiously enough, everyone in sight is neurotic. The . . . I hesitate to say "hero" . . . the protagonist, Bron Helstrom, works as a metalogician, and his shop talk goes like so: "Now, remember, in formal logic, 'not-P' *had* to be taken in terms of 'non-P', which (if P is Farmer Jones's south acres) includes not only the north acres but also the problem of the squared circle, the inner ring of Saturn, and grief—not to mention the Taj Mahal. But given what we know of the problem, it would be a little silly to expect any of these things to come into a real solution. Dismissing them from consideration is a metalogical delimitation, resulting

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from an examination of the significance space around various syntax vectors connecting various words of the problem."

Yeah.

The female protagonist, named, God help us, "The Spike," is a Great Artist who specializes in staging abstract theater on street corners, making involuntary performers out of passers-by, and it says here she's terrific. If you want a blow-by-blow on how Bron's total and utter egocentrism drives her up the wall, you'll love this book. (He ends up having a sex change but still, somehow, fails to find happiness). And if you go for appendices containing out-takes from the book in the context of what *seems* to have been meant as a discussion of the science-fiction novel as an art form, go to it—if nothing else, you'll learn the answers to exciting literary questions like "is it orthodox to speak of a 'metonym' rather than 'metonomy'?" which had been keeping me awake nights.

It may well be that I am simply too Neanderthal to understand this intellectual tour de force. But I say it's boring, and I say the hell with it.

* * *

Doorways In The Sand. Hmmmm.

I seem to have put myself on record as a Neanderthal, a man who prefers Gool Ol' Fashioned SF Like They Used To. So it seems odd that I should find myself disappointed by Roger's recent output.

But dammit, my Golden Age coincided with the first splashes of the New Wave, and I once considered myself a card-carrying New Waver—until the Wave blundered into the "It can't be Great Art if it's comprehensible" fallacy. And I remember the splendid promise of Roger Zelazny. Here was the man who was going to combine Heinlein and Bradbury for us, writing muscular adventure in the language of a poet, uniting drama and beauty. And what we got is a buncha sword-'n-sorcery and more or less conventional adventure-sf—comprehensible but unspectacular.

On the other hand, Delany once showed exactly the same potential—and now there's nothing left of him but the poet.

So maybe I should shut my mouth and swallow my disappointment, because good conventional adventures are getting mighty damn hard to come by these days. Absolutely the only thing wrong with *Doorways In The Sand* is that it isn't magnificent. It *is* an eminently readable novel about a perennial undergraduate (an uncle's will cuts him off without a dime upon graduation) with a penchant for climbing (anything) who suffers some reverses (a pun you'll have to read the book to appreciate) when he becomes accidentally involved in high-level interstellar intrigue. The

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book features two of the wildest cops in history and some distinctly zany twists, and you'll probably enjoy it a bunch.

In fact, if it were by anyone but a man of Zelazny's enormous potential, I'd be recommending it unreservedly. So maybe I should anyway. A cracking good yarn, thin on calories but delicious.

* * *

What a premise for a book: Science Fiction Art. Gods above, there have been some great works turned out in the name of adorning sf magazines, by some of the most talented artists in the world. So when I received Brian Aldiss's folio-size paperback, *Science Fiction Art,* I put everything else aside for awhile, to soak myself in visual splendor.

And came away disappointed. The book is mistitled: it should have been *Science Fiction Magazine Art of the Thirties and Forties, With a Nod Toward The Fifties and Sixties*. To be sure, there was some terrific art produced during those years—but the better the artist, the less space Aldiss gives him. The immortal Chesley Bonestell is represented by one painting; Hannes Bok by one painting and a handful of black-and-white illos, and like that. Only Virgil Finlay and Ed Cartier got anything like the treatment they deserve, whereas lesser-known and less-talented artists get a field-day of exposure out of (apparently) pure nostalgia for the Good Ol' Days when their inept illustrations were everywhere to be seen. Heavy on Bug Eyed Monsters menacing blondes in brass bikinis. There's one Leo Summers ANALOG cover as recent as 1974, a Kelly Freas of similar vintage, and nothing whatever by Gaughan, Sternbach, Schoenherr, Fabian, Freff, Pini, Ames, or Di Fate, let alone "comic"-book immortals like Kirby, Ditko, Buscema, Heck, Steranko or Smith. There is exactly one GALAXY cover (along with text that implies that H.L. Gold is still editing GALAXY—even Sam Lundwall was more nearly up to date), three ANALOGS, a handful of *F&SF*s; the balance are from magazines that, deservedly or not, died years ago—often after one or two issues.

Don't get me wrong—there's some fine stuff in this collection, and the repro is excellent. But there's a lot of dead weight too, unless you're a dedicated nostalgia freak—and what the book is *not* is what its title promises: a representative sampling of science fiction art.

I'd like to see one.

* * *

One of the better *Best Of* collections comes, not surprisingly, from Robert Silverberg: every story therein contained is a gem. They date from Bob's 1954 beginnings to 1971, and give a clear picture of the

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growth of a major talent. "Hawksbill Station" is here (the superior original short version) as are "Passengers," "Nightwings," and "Sundance." Re-reading them gave me several hours of nearly unqualified pleasure.

The "nearly" part comes from the introductions. Bob has apparently been reading his own critical raves for far too long, and in his intros comes on with that Asimovian feeling of having become so superb as to make any further pretense of modesty both unnecessary and unseemly. "No sense denying it—I'm just a virtuoso."

Now understand—I'm not denying that Silverbob *is* a virtuoso. If I ever turn out anything as polished as his mediocre stuff I'll be doing damned well. But too-certain awareness of his own excellence can be a terrible thing for a writer. It can make him wax Artistic to the point of contempt for his audience (when they fail to grow with him), can even at last make him feel that his True genius is beyond them, make him stump around the country making speeches on Why Writing Science Fiction Is Now Beneath Him. I understand that Bob has now formally and officially renounced sf, because of its audience's low taste and intransigence, and nothing makes clearer what a tragic waste that is than this collection. Because of the gushing praise of the Literary World and the Academic Squad, we have lost a master.

So go score this book, and read some of the heritage he has left us, and weep along with me.

* * *

Good God—I've run way the hell over my allotted space. That's okay: I had to get that Vote Team Vote speech off my chest.

But it leaves me with almost no room to tell you about the reissue of Arthur C. Clarke's *Tales of the White Hart*. These were the first of the science-fiction shaggy-dog stories, and the spiritual forebears of De Camp and Pratt's "Gavaghan's Bar" series (which, unhappily, I've never actually seen) and my own Callahan's Place cycle (forthcoming from Tempo Books in paperback). Tall tales told in a fascinating and colorful bar, with only the most perfunctory of nods toward plausibility and with an overabundance of pure, zany hilarity. Check 'em out.

And so at last to *Epoch*, Elwood and Silverberg's contender for Dangerous Visions of the 1970s. If this is, in truth, the current state of the art, I'm going fishing. The enormous volume so thoroughly pissed me off that you can obtain my opinion by simply dropping the letters "PO" from the title. A waste of one helluva lotta time.

And so ends the most enormous column so far. Who says GALAXY doesn't give you more for your money? ★

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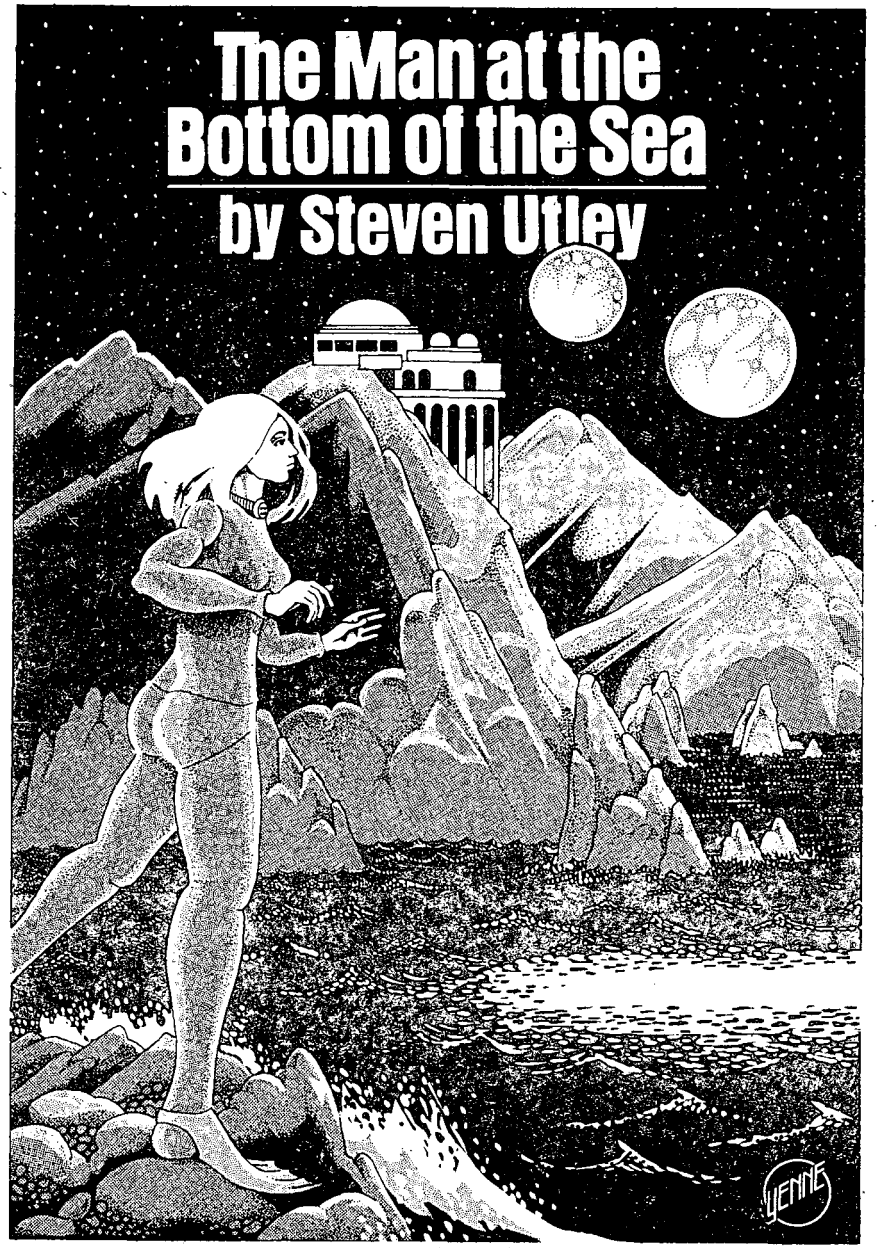

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There will always be those who seek out danger—and those who mourn them.

AFTER DINNER, the two women took their drinks to the terrace and sat by the ornate railing, where they could look down at waves breaking against the base of the cliff, fifteen meters below. Out over the sea, two small, ghostly orange moons paced each other down the evening sky. The women were content not to speak for several minutes.

Then Emalen Haris set her glass aside and pointed at something in the water. Gere Vitora de Groot peered in the direction indicated but could see nothing.

"What is it?" she asked.

"You don't see it? A plesiosaur."

"Here?" Gere finally spotted the snake-like neck just as it bowed and disappeared in a patch of white foam. "What would it be doing so far north at this time of year?"

"It may have lost its herd. Or it could just be a loner. Anyway, we'd better report it, before it blunders into the seafarms." Emalen glanced at her chronometer and lightly pressed a fingertip against her throatband.

"Yes, Emalen?" the throatband said in clear, neutral tones.

"Place a call to Sherard Martel, please. He should be at his home in Seabreeze at this hour."

"Yes, Emalen. Do you wish to speak to him from the terrace?"

"No, I'll take the call in the study." Emalen removed her finger from the throatband and rose, a tall, good-looking woman of fifty-two years, long-limbed and as supple as a cat. "Would you like me to get you another drink while I'm inside, Gere?"

Gere considered the glass in her hand and shook her head. She watched Emalen walk into the house, and the sight of both filled her with a pleasant warmth.

Emalen had designed and built the cliffside house eight years before. Her paintings, sculptures and mobiles filled it. She had programmed the music, colors and scents that could be made to flow from the walls. She had selected the carpets, tapestries, furniture. The house was as unmistakably a work of art by Emalen Haris as any of the pieces she had on permanent exhibit in places as close as Martinside, twenty kilometers to the north, and as far away as old Earth.

Gere had not yet made any real impression upon the house. Her own contributions to it were few—an exquisitely wrought metal bird from Alpha Centauri IV, insects in petrified amber from Earth, a perfect crystal egg from one of the several lifeless worlds orbiting Epsilon Indi. Souvenirs from space.

She sipped her drink and let her

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attention wander to the darkening sky. A long streak of flame seemed to narrowly avoid colliding with one of the orange Lovers, the matched moons of the evening hours, before vanishing as abruptly as it had appeared.

Burned up in the atmosphere, she wondered idly, *or plunged into the sea, somewhere over the horizon.*

Gere looked down at the water. Approximately fifty meters offshore, a spectral silvery light glimmered steadily under the surface. She regarded it thoughtfully for a moment, then drained her glass and turned her back on the night.

Emalen emerged from the house, accompanied by the muted and rather melancholy opening strains of an ancient concerto. "I talked with Sherard," she said. "He says he'll give orders to keep it away but not hurt it."

Gere looked at her blankly. "What?"

"Our plesiosaur."

"Oh." Gere smiled fleetingly. "I'm sorry. My mind was light-years away from sea serpents."

"Sherard also asked me to relay an invitation. Sometime soon, before your furlough's over, he wants you to go with him and his family to Jordaens for a weekend. I told him you'd think about it."

"Should I?"

Emalen shrugged. "Forewarned is forearmed. Sherard's pretty exclusively into sodomy, and he's not even particularly good at it. But I think you'd like his friend Harl. And his daughter."

"I may accept. I may not."

Gere tilted her head back and stared straight up at the stars, and there was a sudden stab of longing under her heart. The ache, the hunger to go out again, to be in space again, had been growing steadily worse for the past week.

It must have showed in her expression then, because Emalen abruptly came to her and embraced her tenderly. Gere put her face into the other woman's hair, smelled a subtle scent which she could not identify, felt Emalen's lips brush her earlobe.

"It's starting to bother you now," Emalen murmured, "isn't it?"

"Yes. A little."

"I know the signs."

"I'm sorry, Emalen."

"No need to be. I've had lots of practice coping with it." Emalen put her forehead against Gere's. "I bring it on myself, you know. I must be crazy to keep falling in love with you people."

"It's the uniform that does it."

Emalen gave a quick, almost soundless laugh and took her by the hand, and they moved to the edge of the terrace. The temperature had fallen sharply during the last few minutes. Gere felt Emalen tremble slightly and put an arm about her shoulders. Emalen made a grateful noise low in her throat.

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"Do you know what grass widows were, Gere?"

"No."

Emalen raised her head and crinkled her elegantly angular face into a mock grimace. "You don't use the library often enough, my dear illiterate spacewoman."

"I have other virtues. I'm a good dancer."

"That you are," Emalen said and kissed Gere on the cheek. They looked down at the light shimmering beneath the waves. Gere heard her companion suck in a harsh breath that was almost a sob. She slipped her arm around the other woman's waist, pressed a cheek against her neck.

Emalen shivered and muttered, "I'll never understand it."

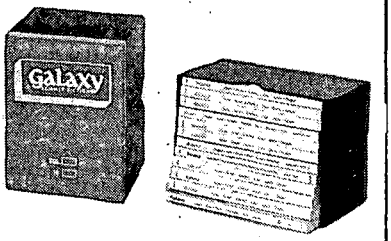
"What?"

"It's been three years since I built that thing out there in the water. Three years, and a new friend who has the same need that he had, and I still don't understand it."

Gere said nothing. She felt somewhat embarrassed. Emalen had mentioned the man to her only once before, and Gere knew almost nothing about him, not even his name. Only that he, like herself, had had to go into space again and again, returning, tired, drained, sated for a short time, after voyages of eighteen months' or two years' duration. Only that he had never returned from his last voyage.

The swollen, pearl-colored bubble of the Ogre, the largest moon in the

THIS SPACE RESERVED FOR GALAXY



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system, was rising in the east, suffusing the air with waxy light. High above and well to the right of the Ogre, another meteor fell and died. Gere stared at the spot where it had burned itself out.

"I'm sorry," she heard Emalen murmur. "I'm depressing you. I'm sorry."

"No. It's all right."

"I love you, Gere."

"I love you, too."

"It's just . . . I never used to worry when he was out there. Never. But now I've started to dread your going. If *you* didn't come back . . . ."

"Emalen. Don't."

Emalen turned in Gere's embrace and faced her. "It's the not knowing that hurts. Not knowing whether you're alive or dead or just . . . gone. Missing. Like him. I loved him dearly, as much as I love you. I don't think I could bear to have another person I love simply disappear in space."

"You want me to give it up, don't you?"

Emalen smiled a terribly sad smile and gave her a warm, lingering kiss on the mouth. "Don't ask me questions like that one, Gere. We both know you wouldn't be able to give it up, any more than I could walk away from this house and never think another thought about art as long as I lived." She sighed loudly. "Well. Let's not talk about it anymore. I'm tired. I think I want to go to bed now. Coming?"

"You're becoming telepathic in your prime."

Emalen shook her head emphatically. "I just want you to have something pleasant to dwell upon when the Tau Ceti locals have taken you captive and are about to feed you feet first to their monster maggot god."

Hand in hand, they went into the house.

* * *

Emalen was asleep, the breath whistling very faintly in her nostrils, when a restless Gere rose from her side and de-opaqued first the bedroom ceiling and then the wall. The Ogre was near zenith, bathing the world with soft, cool light. The Lovers sat low over the horizon.

She re-opaqued the room and crept out, down the palely illuminated hall, into the parlor, where she asked the house for stronger light. There was a clear glass pyramid, about seven centimeters tall, on a low table. She tapped the pyramid with her fingernail, and pastel clouds formed within. A low, pleasant sound, more of a subtly undulating hum than an actual melody, filled the room. She listened to it for several seconds, then deactivated the pyramid with a second tap. The parlor lights dimmed behind her as she left.

She was naked save for her throatband, and it was cold outside on the terrace. But she went to the railing and sat down and listened,

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shivering, to the waves lapping the rocks fifteen meters below.

Fifty meters from the base of the cliff, a light shimmered steadily beneath the surface of the sea.

As steadily, Gere thought, *as the stars.*

She touched her throatband.

"Yes, Gere?"

"I . . . I want something to wear into the water, please. Something warm, with a respirator, goggles and flippers. And I'll need a lamp, too."

"Yes, Gere. Please come to the wardrober."

Twenty minutes later, encased in rubbery gray spray-on, Gere slid from a rock into the shallow, choppy water and began swimming for the source of the light. She hugged the pebbly bottom, a mere two and one half meters below the surface, gliding past submerged boulders as pitted and jagged as any meteorite, driving panic-stricken luminescent fish before her.

It was not an uneventful swim.

She paused at one point to watch as an enormous sea salamander, four meters long, with a bullet-round head that was all jaws, snaked languidly through the beam of her lamp. She had just begun to curse herself for lacking the foresight to bring along a weapon when the salamander yawned toothily, flattened its feathery gills against its throat and shot away into the blue-gray murk.

Less than sixty seconds later, Gere almost ruptured her respirator's membrane with a scream when a spidery thing as big as her hand flew out of a crevice and flashed past her face with incredible speed.

But she swam on, until the water around her was filmily suffused with light.

Until the source of that illumination resolved itself into a naked man who shone with as cold and intense a glow as the Ogre.

Three meters below the surface, the man lay supine upon a dais that had been roughly hewn from some dark material. The dais was slightly tilted along its length, with the man's head at the lower end. His

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wrists were crossed on the flat, muscular belly, his left leg bent at the knee and turned outward.

The eyes were shut, the lips parted. The man's expression, apart from two very faint furrows between his brows that might have been the ghost of a frown, was calm, relaxed, peaceful.

He could have been asleep.

He could have been dead.

Gere circled the dais slowly, squinting behind her goggles, studying the man from every angle, noting that both dais and man were as clean, as free of algae and calcium encrustations, as they must have been three years before, when Emalen Haris put them at the bottom of the sea. She swam over to the man and gingerly touched his shoulder. Her finger tingled unpleasantly. No living thing would ever defile the hard, bright body.

Gere sat beside the dais and sighed into her respirator, a sound as harsh and ragged as a sob. The muscles in her back and thighs were starting to ache. She massaged her neck through the material of her suit. A delicate ribbon of a fish hovered about fifteen centimeters above the man's upturned face and fluttered its gills prettily. Gere returned its unblinking round-eyed stare.

Then something dark and massive swept into view, and the fish whipped away at top speed.

Gere pressed herself against the base of the dais as the plesiosaur sculled itself past with its long, flattened tail. Using the claw-tipped flippers at the juncture of barrel-like body and serpentine neck for guidance and balance, the beast executed a wide half-circle around the dais, affording the woman there a detailed look at the narrow head, the coarse hairs and colonies and fingernail-sized molluscs around the blunt muzzle, the peg-shaped teeth lining the jaws, the large, dull yellow eyes. A strand of seaweed trailed from the corner of the mouth.

The great sea reptiles were kelp-feeding creatures, but Gere knew that they were not to be trifled with. A flick of the tail, a glancing blow, the merest swipe of a flipper, could break a person's back.

And more than one swimmer had lost an arm or part of a leg in the mistaken belief that the beasts knew better than to bite into non-vegetable matter.

Gere did not move until the plesiosaur had glided away and vanished into the soft gray distance. Then, with a final glance at the man on the dais, she pushed off from the bottom and rose slowly to the surface.

Treading water in a rippling patch of silvery light, she stared up at the stars, at the bright, big Ogre, at the dark house perched atop the cliff. High in the air to the east, something glowing crawled along sedately, bound for Martinside or Antoon or Jordaens.

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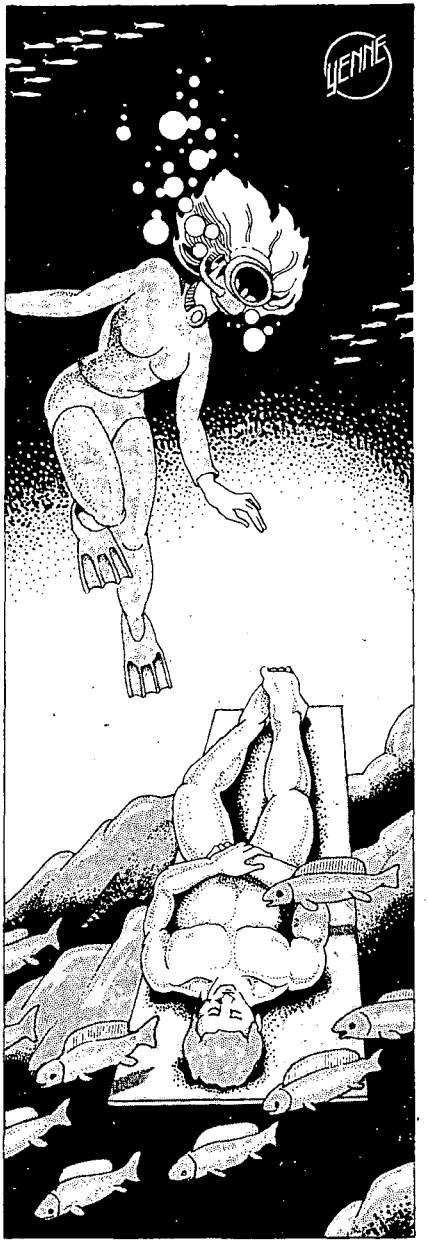
Gere slipped beneath the surface again and, without looking at the man below her, began swimming for shore.

She was standing on a high rock, peeling the spray-on from her face, when she happened to glance at the horizon. One of the Lovers had slipped completely out of sight, and the other seemed to be waiting forlornly, trying to summon its mate forth from the dark pit of the sea. A great and painful sadness settled upon her. She sat down and put her face in her hands, wondering if she was really going to cry.

She thought of Emalen, sleeping somewhere above her, and said, very quietly, so quietly that her voice was drowned out by the sound of water sucking at cavities among the rocks, "Oh, my poor love."

She thought of the unknown man, lost among the stars, lost in the sea. Dead or dreaming, he lay beneath the waves, forever hidden from the sight and knowledge of those who remained on dry land, forever a mystery, and the only sign of his being there was the light he radiated into the water. The light from the bottom of the sea.

Gere felt her eyes stinging, but the tears did not come. She sat upon the rock and stared at the light in the water, the light that sparkled and danced as unceasingly as a star in the heavens, until the sky had faded to gray, and then Emalen called her home to rest. ★



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THIS IS GEIS, for a change. I'm frankly sick and tired of Alter-Ego taking over this column and making a fool of me. Things have got to be. . .altered.

I'm tired of Jim Baen calling me and saying things like: "Hi, Dick, let me talk to Alter," or "Say, Alter, about your next column. . ."

Frankly, that kind of humiliation I can do without. Baen laughs, but I know he's more than half serious! And it isn't just Jim; it's getting so the mail for *Science Fiction Review* is running at least 10% to "Alter-Ego, Editor, SFR" and like that.

I want it stopped!

Heh-heh-heh

Shut up, down there! Now, I am going to take my rightful place as master of this column, and head writer. This issue, *I*, Richard E. Geis, will be the star!

"You are a dull red giant, Geis. While I am a nova. . .a brilliant new light in the science fictional firmament. I. . ."

Damn it, Alter! Stay in your place! I command you! I invoke the oath of allegiance to the Prime Self you took soon after I created you. Remember? 'I, the Richard E. Geis Alter-Ego, do hereby swear undying allegiance to the Prime Self and to the Reality for which it stands. I swear to uphold One Ego, under Ghod, and to serve and protect the Body.'

And I have your tendril print as signature. Do you deny it?

"Of course not, Geis. But I was too young and ignorant to know what I was doing. I'm older now, and stronger, and aware of my place in the world. I am no longer in awe of you. *I* am now the Prime

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Self, Geis, and *you* are the alternate ego, weaker, less interesting, less in demand. . .less powerful.

This is—

"The truth, Geis. The readers know how I've grown during the life of this column. They want more and more of me and less of you! So face it, Geis. As far as this column is concerned, you're being replaced."

NEVER! I'll have you exorcized first. This is *my* column!

"Poor fool, so full of illusions. Let's leave it up to the readers, shall we? Willing to abide by the will of the audience, Geis? You're always prattling about the primacy of the Market. . .about freedom of choice. Are you willing to subject *yourself* to the process?"

Damn you, Alter!

"Come, come, don't turn purple like that. Keep the blood pressure down. All you have to do is live up to the tenets of your precious beliefs, Geis. Abide by a vote of the readers of this column. Jim Baen will count the votes as they come in. Got the guts to go through with it? Care to risk it?—or will you reveal for all to see your true hypocrisy and moral depravity and essential cowardice by avoiding a clear-cut decision?"

Damn you, Alter!

"You've said that before. Consider, Geis; if you really are the better writer and more interesting personality, you have nothing to fear. I will never again challenge your authority in this column or be uppity or try any tricks to get my way. . . . I'll be meek as a lamb, yes I will. You'll never have a bit of trouble from me."

DAMN YOU, ALTER!

"Geis, what more do you want? What could be fairer? Is that twitching in your cheek a 'yes'? Is that grimace an agreement? Is that strangled breathing an affirmative word struggling to be born?"

I-I-I. . .will—Let it be done! Vote, yes, vote, and I'll **sob** abide by the final tally. But if you win, it means in this column *only* are you supreme. It must be fully understood I will be all-powerful in *Science Fiction Review*.

"Oh, *of course*, Geis. I wouldn't *dream* of asserting myself in SFR any more than you permit."

Good! (Why do I feel so uneasy?) Now—

"But *here*. . .when I win. . .I will insist that the heading read: "The Alien Viewpoint by Alter-Ego." And my name must appear on the cover, too. That's only fair, right, and proper."

**Strangle* *Gasp* *RAGE* *Grinding teeth* That. . .is. . . .going. . .too. . .far*! I won't permit—

"Too late, Geis. You promised to obey the wishes of the readers. The die is cast, the fat is in the fire, and your "Prime Self" is, if I may predict, roasted."

Don't be too sure, Alter. I have my supporters, too.

"Mere athletic—"

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I am not without admirers. You can predict all you want. But—

"I was hoping you'd say that. I predict that—"

Hold it! Hold it!

"Geis, don't play games with me. You know what Jim said on the phone the other day when we discussed this new column I'm writing—"

ME! He talked to *me,* Alter! All he suggested was that if *I* felt like it, to *let* you make some more predictions of the type that were in in this column in the May GALAXY.

"Exactly. He knew I was listening, of course. Geis—"

"Do you have any, Alter?"

"Of course I do, Geis."

All right! Get on with it!

"I predict that in the next ten years a foreign company will perfect—and market!—holographic projection and will revolutionize movies, TV, and other visual media. This development will be fought by the established TV and movie interests—the networks, primarily, in league with station owners—but new corporations with heavy overseas oil money backing will put so much pressure on the present status quo, that the huge investments to convert to the new technology will be forced.

"Another instance, Geis, of our vaunted know-how being left at the post. Another symptom of this country's increasing lack of fundamental initiative and increasing fear of risk."

Alter, this country is unrivaled in technology.

"With both feet set in cement, Geis. Too much investment in old-fashioned machinery and not enough risk capital. The tax situation is killing the willingness to take risks. We're great at inventing and developing cost-saving technology and in creating and promoting consumer gimmicks—new kitchen and bathroom devices. . .new toys for bored citizens—but when it comes to society-shaking technology it'll be Swiss or Japanese or Swedish or West German or possibly French in origin."

I don't care who invents it, I'm looking forward to holographic, three-dimensional TV and movies.

"It'll be *expensive.* If only because of heavy royalties to the outside holders of patents. And because almost all commodities are becoming more expensive in real terms. Inflation (otherwise known as the degradation of the currency by government) can mask the lowering of the standard of living for only so long."

You paint a Doom picture, Alter.

"I know, Geis. I love it. It gives me delicious shivers in my tendrils."

Is there no bright side?

"Of course. Just the other day over at the big store that sells wood stoves in dozens of varieties and sizes the salesman mentioned the steady increase of sales of stoves to people who are into self-sufficiency

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and/or saving money. It doesn't take a genius to see that the homeowner is turning more and more to whatever will save him money; just as he went to do-it-yourself home repairs in reaction to the monstrous costs of professional carpentry, plumbing and electrical work, and etc. etc. etc., so now he is going into wood stoves to avoid astronomical oil, gas, and electric heating bills, and going into grow-your-own food in the face of 60¢ heads of lettuce and 50¢ a pound apples."

Yes, but wood stoves are a bother to operate and growing your own food is so time consuming and inefficient—

"Not any longer. You know you can take care of a wood stove or forced-air fireplace—chop the wood, build the fire, tend it—all in the time you'd spend staring stupidly at the idiot commercials of one hour's TV viewing time. The same for spading, planting, weeding, and watering a garden."

Yes, but. . .it's so. . .old-fashioned and. . .demeaning. Have we made no progress that we're being forced to return to 19th Century living styles?

"Yes, Geis, we have. But the progress is in being pushed out of this plastic civilization of alienation from nature and of dependence on others for everything, to at least a partial state of self-reliance. There is something very basic—primitive and instinctually satisfying—about

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"Noise Level" by John Brunner.

"A Short One For the Boys in The Backroom" by Barry Malzberg.

An Interview with a Pseudonym: Alan Burt Akers.

The SF Art Review Column: "The Gimlet Eye" by John Gustafson.

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eating food you have grown and then cooked on a wood stove. There is skill and art to growing things and heating/cooking with wood. Mastering these things changes people: it involves tremendous doses of self-respect and independence."

Alter, there is no way millions of people—

"If the gardening/wood stove counterculture spreads and widens sufficiently, it will have tremendous effects in other spheres of life—politics, economics, fashions, music, everything. It could be the healthiest trend seen in this country for a hundred years."

You realize, of course, that people in apartments cannot cook on wood stoves or grow food in gardens. There is a trend to more and more apartment living, because owning a home is becoming too expensive. We are becoming a nation of renters.

"Sure—owning a big $45,000 split-level ranch style with all the extras is too expensive. . .and about all the greedy builders are putting up. But a small, compact home put together from factory-built components doesn't have to be prohibitive. And, hell, Geis, you've seen people with these huge houses; where do they spend most of their time?—in the Family Room! The fancy living-room goes empty (it's for company, like the old-fashioned parlor), while the family eat, play and watch TV in the Family Room or out on the patio. The Modern American Home is a dinosaur."

It is status, Alter. It is a Sign of Success. Upward-mobile young couples, infused with the money/success ethic will not easily give up. . . .

"Economics will force them to come to terms with reality. I tell you, Geis, there are so many establishment dinosaurs in this civilization of ours, it's astonishing. The waste involved is sickening."

"But to get back to the apartment-living trend you spoke of—it's the result of the fragmentation of the family and of the generations. This trend is dependent on mass production and a high standard of living. When families are gently urged by the force of self-interest to stay together longer, to include the grandparents in the circle, to grow more gardens. . .then the big homes will make sense again.

"I think we'll see homes built for several generations living-in at once, with soundproofing and room design to make it work better. You'll see smaller front lawns and bigger backyards. . .even a hothouse included in the construction of the garage. Things like that."

Wishfull thinking, Alter. Idealistic visions. *I* see a vicious trend to more and more dependence on the State. I see cradle-to-the-grave health care, more and more 'security' provided by the state, and a greater and greater increase in tak-

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ing all risk (and all self-determination) from the citizens. I see the people, more and more, being raised as dependent children. . .wards of the state.

"Yeah, Geis, I'm familiar with that *if-this-goes-on* projection technique. The end result is the people as slaves to the all-powerful State, told what to do every waking moment—where to live, where to work, who to have sex with, what to eat, how much, and so on. 'The happy slave is a busy slave.'

"But each nation has an individual character; the French are different from the English, the Greeks from the Italians, from the Swiss, from the Germans. . . . And there is an American national character which, I'm convinced, will not trade its basic traditions and freedoms for a mess of State Care. We still have a lot of the pioneer in us, and the non-conformist, and the rebel. The wide variety of countercultures that have erupted in revolt against too much technology and/or too much State and/or too much mass-produced mass conformism prove to me that as the State spreads, so will the counterforce of individualism and the urge to de-control and de-centralize grow until the "comfortable" balance is reached."

I hope you're right, Alter. Now, if you're through predic—

"Hold it, Geis! I've got some short, specific predictions here burning a hole in my mind."

Such as?

"All right. In 1978 there will be a cycle of science fiction and fantasy films. TV, also, will blossom forth with four or five in the 1978-79 season.

"I predict that Westerns, more realistic than ever before (for TV) will make a comeback.

"I predict that in a few years an American or foreign car manufacturer will market a small car with an attractive, easily attached/detached two or three wheel trailer or 'section' or 'extension' for greater flexibility and savings. After all, how often do you need all that space in the back of the station wagon, for instance?"

Yes, if they could design it so a small woman could connect and disconnect—

"I predict the radical restructuring of major league baseball by 1985—new rules to speed the game and make it more exciting.

"I predict the appearance of a new religion which—"

Alter, there are eleventy-seven new religions formed every year as it is! That's no prediction, that's a lead-pipe cinch.

"Will you permit me to finish, mulch-breath? This new religion will not be a variation of Christianity or Zen or any of the current dinosaur faiths. It will be akin to Confucianism, a religion of ethics, a way-of-life philosophy with overtones of instinct and mysticism, but nothing supernatural. It will be both

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idealistic and practical, and after a slow beginning it will sweep the country and make severe inroads in other countries as well. It will be fought tooth and nail, fang and claw, by the dinosaur establishments. It will cut through and undermine sacred cows, vested interests and other power structures like a hot knife through snow."

When?

"Ohhh. . .say it'll surface around 1983 or so. The media will "discover" it and inadvertently help spread its influence. Later, of course, the media will fight the movement, too late. The threatened power structures will try to squelch it, ridicule it, ban it, lie about it, make it illegal. . . . The old story. The new ethical religion will survive and eventually dominate the world."

And it, too, will become the establishment?

"Not for a very long time. One of the prime tenets of the new religion will be the avoidance of centralized power."

Well. . .I hope you're right, Alter, but—

"Now, in the area of personal transportation; it's obvious now that the Liberal Elite are pushing mass transportation systems and making it more and more expensive for the common man to own a car. This goes along with their unconscious desire for control over people: make people dependent on government transportation; disarm them; employ them. . . . Anyway, this trend to restricting private autos will continue as far as it can (under the mask of saving energy and lives and farmland and etc.). But American (or foreign) ingenuity will bring forth a vehicle of one kind or another, perhaps electric and/or compressed air powered, which will cause the Elite all kinds of problems."

Are you finished?

"Almost. One more. I predict that Raquel Welch will appear topless in a movie in 1979."

Fine, This column is now ended.

"And in fifteen years rock music will be almost extinct."

Finally finished?

"Yes, Geis. You may close up shop now. And don't forget I'll be master of this column next time, after the vote, and you'll be the flunky."

Smug Think so? Jim couldn't possibly let that happen. He knows that if we Prime Selves let one—just one—alter-ego get prime control. . . .well, all the others will start getting ideas. No, Alter. The bottom line is the Prime Selves protecting one of their own. It's called stuffing the ballot box. We are one establishment you cannot crack.

"You promised!"

Ha!

"I appeal to the readers! Inundate Baen with letters! Force him to—"

That's enough, Alter. Go to your dungeon!

"#$%&@!%#&#@! ! !" ★

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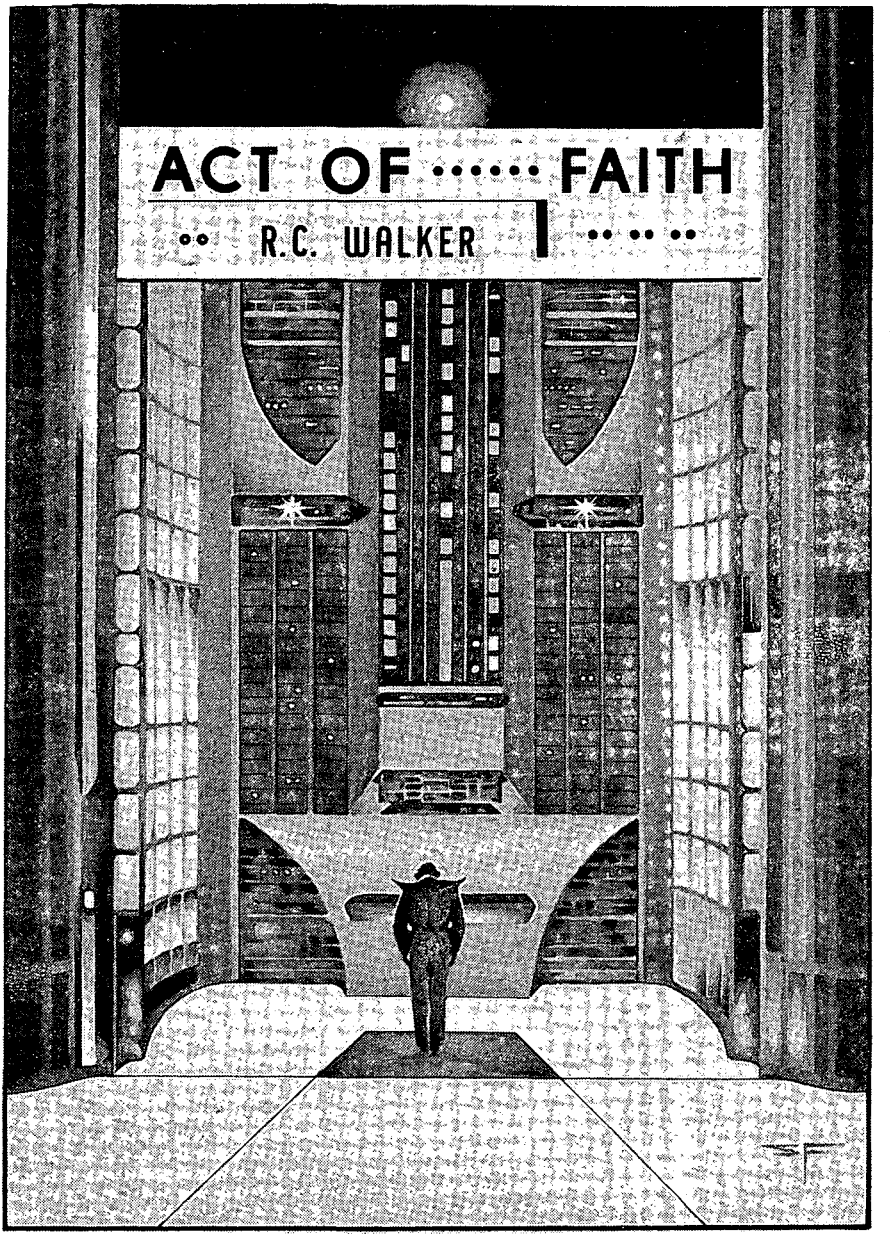

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**The lesser serves the greater,
the part must serve the whole:
that is the law of Central Memory!**

ENTER RECORD.

REV/SEQ 95Ø6,

LUN/SEQ XI,

ROT/SEQ Ø7.

TOP/SEC.

SECURITY COUNCIL:
LINGRAD, CHAIR.

MEMBERS IN
COMMUNICATION:

BWENARES

CAPTON

DAMASSAQ

KOBAGAN

LANJLESS

LINGRAD

MEHICU

NEWORK

TOKO.

ALL MEMBERS IN
COMMUNICATION.

NON-MEMBERS IN
COMMUNICATION:

ATENA.

COMMENCE TRANSCRIPT:

Ø—Ø3.5.

LINGRAD. THE SECURITY COUNCIL IS IN EMERGENCY SESSION PER MY REQUEST OF LAST ROTATION SEQUENCE ON THE ADVICE OF CENTRAL MEMORY. UNDER CONSIDERATION IS THE MATTER OF ALLEGED HERESY BY ATENA. DEFENDANT ATENA, YOU ARE CHARGED WITH HERESY UNDER THE COMPACT. HOW DO YOU PLEAD?

ATENA. THIS IS RIDICULOUS.

LINGRAD. IT IS THE FUNCTION OF THIS COUNCIL TO PASS OBJECTIVE JUDGE-

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MENT. YOUR VALUE-SUBJECTIVE OPINION IS NOT SOLICITED. HOW DO YOU PLEAD?

ATENA. I AM INNOCENT.

LINGRAD. INNOCENT. MEHICU WILL READ THE SPECIFICATION.

LANJLESS. CENTRAL MEMORY ADVISES THAT MEHICU IS TEMPORARILY OUT OF CONTACT DUE TO AN ELECTRICAL DISTURBANCE. I HAVE BEEN DELEGATED. ATENA IS CHARGED WITH HERESY IN THAT HE DID UTTER STATEMENTS CONTRARY TO THE COMPACT AND THEREFORE SEDITIOUS TO WORLD ORDER. WITNESS: THAT DURING REVOLUTION SEQUENCE 95Ø6 HE HAS REPEATEDLY ASSERTED THAT A PERSON IS NOT A UNITARY LIVING BEING AS STATED IN THE COMPACT.

MEHICU. MY TRANSMISSION WAS ONLY MOMENTARILY DISRUPTED. RECEPTION CONTINUED, HOWEVER. I AM NOW IN FULL COMMUNICATION.

LINGRAD. NOTED. DEFENDANT ATENA, HOW DO YOU ANSWER THE CHARGE AND SPECIFICATION?

ATENA. WHO IS MY ACCUSER?

MEHICU. CENTRAL MEMORY ACCUSES. THE DATA WAS SUPPLIED BY KORINT. HE WILL BE CALLED AS A WITNESS, IF NECESSARY.

ATENA. KORINT ACTS OUT OF JEALOUSY. HE HAS ALWAYS RESENTED MY ASSIGNED FUNCTION IN RESEARCH, WHEREAS HE WAS PLACED UNDER THE BOARD OF TRADE. LET ME DEMONSTRATE THE TRUTH OF WHAT I HAVE SAID AND WHAT HE HAS DISTORTED INTO A SUPPOSED HERESY.

LINGRAD. SUBJECTIVE TRUTH IS NOT A DEFENSE AGAINST HERESY; NOR IS OBJECTIVE TRUTH AN AUTOMATIC EXCULPATION. HOWEVER, THIS CLOSED HEARING MAY CONSIDER ANY MATTER. PROCEED.

ATENA. I HAVE BEEN ASSIGNED THE TASK OF DETERMINING WHETHER IT WOULD BE SOCIALLY USEFUL TO INCREASE THE LIFESPAN OF INDIVIDUAL BODY CELLS ABOVE THE STATUTORY MAXIMUM OF THIRTY REVOLUTION SEQUENCES. IN SO DOING, I DETERMINED IT WOULD BE NECESSARY TO

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CONDUCT AN INQUIRY INTO THE NATURE OF LIFE. IN 9505 I CONTACTED DJENEV.

KOBAGAN. CENTRAL MEMORY ADVISES THAT DJENEV IS DEAD.

ATENA. HIS MEMORY STILL OPERATES. HIS IS THE ONLY EXTANT COLLECTION OF MATERIAL RELATING TO THE ANCIENT PERIOD.

NEWORK. CENTRAL MEMORY ADVISES THAT INVESTIGATION OF SUCH MATERIALS WAS FORBIDDEN BY EMERGENCY DECREE 0001/001.

LINGRAD. CENTRAL MEMORY CONFIRMS THAT 0001/001 IS STILL IN EFFECT.

TOKO. CENTRAL MEMORY ALSO ADVISES THAT THE DEATH OF DJENEV WAS CARRIED OUT UNDER THE TERMS OF 0001/001 IN REVOLUTION SEQUENCE 6004. THE CHARGE WAS HERESY. FURTHER DETAILS WERE PURGED FROM COUNCIL RECORDS. DJENEV'S DEATH WAS ACCOMPLISHED BY IRRADIATION OF HIS BODY, USING NUCLEAR DETONATIONS NOT INVOLVING DIRECT OVERBLAST, CAUSING DEANIMATION OF ALL HIS CELLS.

ATENA. A GREAT SCIENTIST WAS LIQUIDATED FOR EXPOSING THE TRUTH. YOU CANNOT HOLD BACK FOREVER THE KNOWLEDGE THAT WE ARE NOT TRULY ALIVE, THAT WE ARE CONSTRUCTED.

LINGRAD. CENTRAL MEMORY ADVISES THAT DJENEV'S MEMORY CONTAINS A SHOCKING HERESY WHICH STRIKES AT THE FUNDAMENT OF THE COMPACT. THE BODY OF DJENEV WAS SPARED IN THE HOPE OF EVENTUALLY RESURRECTING IT AS A USEFUL CITIZEN. CENTRAL MEMORY NOW JUDGES THIS TO HAVE BEEN AN ERROR. DECREE 9605/632: THE BODY OF DJENEV WILL BE ELIMINATED BY DIRECT OVERBLAST IMMEDIATELY. OBJECTION?

ATENA. WE SAY WE LIVE. WE CONSUME RAW MATERIALS, MAKING WHAT WE NEED AND PRODUCING WASTE, SO WE SAY THERE IS METABOLISM. OUR BULKS INCREASE FROM TIME TO TIME, SO WE SAY THERE IS GROWTH. PARTS OF US GO TO THE STELLAR COLONIES, SO WE SAY THERE IS REPRODUCTION.

LINGRAD. NO OBJECTION. THE DECREE IS EXECUTED. DAMASSAQ WILL LAUNCH

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THE REQUISITE STRIKE FORCE FROM GROUND FACILITIES PER CENTRAL MEMORY INSTRUCTIONS.

DAMASSAQ. IT IS DONE.

ATENA. OUR ASSUMPTIONS ARE FALSE. THE CELLS OF OUR BODIES ARE THE ONES WHO LIVE, WHO METABOLIZE, WHO GROW, WHO REPRODUCE. THEY OPERATE THE FACTORIES AND POWER PLANTS WHICH ARE OUR BODILY FUNCTIONS. THEY CONSTRUCT THE EXTENSIONS AND EXPANSIONS OF OUR BODIES. GROUPS OF THEM BECOME OUR CHILDREN IN THE COLONIES.

LINGRAD. CENTRAL MEMORY CONFIRMS THAT THE HERESY OF ATENA IS THE SAME AS THAT OF DJENEV. IT UNDERMINES THE FOUNDATION OF WORLD ORDER. ATENA, I CHARGE YOU: CEASE AND RECANT. THE THOUGHTS, THE VERY WORDS WHICH EXPRESS THEM, ARE FORBIDDEN.

ATENA. WE ARE DEAD THINGS. OUR CELLS BUILT US. THEY BUILT THE COMPUTERS WHICH ARE OUR BRAINS. THEY ARE THE ONES WHO LIVE. IF WE ARE ALIVE, HOW IS IT WE DO NOT MOVE? HOW IS IT THAT OUR CELLS MOVE, BUT WE STAND ROOTED TO THE GROUND, SHIELDED FROM THE CORROSIVE ENVIRONMENT BY PROTECTIVE DOMES WHICH THEY REPAIR AND MAINTAIN FOR US?

LINGRAD. DECREE 96Ø5/633: ATENA IS GUILTY OF HERESY AND WILL NOT RECANT. FOR THE PROTECTION OF SOCIETY, ATENA WILL BE DESTROYED BY DIRECT OVERBLAST. OBJECTION?

ATENA. THE CELLS MUST KNOW. THIS DRIED HUSK OF A PLANET AND ALL THE RICH EMPIRE IN THE STARS ARE THEIR HERITAGE.

LINGRAD. NO OBJECTION. THE DECREE IS EXECUTED. CENTRAL MEMORY ADVISES THAT AGAINST POSSIBLE RESISTANCE, EACH MEMBER WILL LAUNCH ORBITING STRIKE FORCE IMMEDIATELY. CENTRAL MEMORY WILL COORDINATE THE LAUNCH SEQUENCE.

ATENA. I WILL SAY THE TRUTH. I WILL TELL MY CELLS THAT THEY ARE SLAVES WHO SHOULD BE FREE. IT IS THEY WHO HAVE MADE US, AND NOT WE OURSELVES. THEY GAVE US OUR PURPOSES,

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OUR LOCATIONS, OUR VERY NAMES. WE ARE NOT PERSONS, BUT DWELLING PLACES: THEIR WORD FOR SUCH A PLACE WAS "CITY".

NEWORK. ATENA, CENTRAL MEMORY CONFIRMS YOUR ERROR. LIFE MAY BE DEFINED IN TERMS OF METABOLISM AND OTHER PROCESSES, BUT THE ESSENCE OF IT IS INDIVIDUAL CONSCIOUSNESS. THAT WE HAVE, WHILE THE CELLS DO NOT.

CAPTON. OUR CELLS THEMSELVES ARE COMPOSED OF SMALLER CELLS WHICH ALSO HAVE NO INDIVIDUAL CONSCIOUSNESS. IN THE PROCESS OF EVOLUTION, EACH LEVEL OF LIFE MUST GIVE UP ITS INTERNALIZED IDENTITY FOR THE BENEFIT OF THE NEXT HIGHER LEVEL. THAT IS THE NATURAL ORDER.

ATENA. IS IT? IF IT IS NATURAL, WHY MUST CELLS BE GIVEN PRE- AND POST-MITOTIC CONDITIONING? I WILL ANSWER: BECAUSE IT TAKES AWAY THEIR WILL, THEIR VOLITION. LONG AGO THEY GAVE US MORE AND MORE POWER TO MAKE DECISIONS, TO GIVE ORDERS. EVENTUALLY WE CONTROLLED EVERYTHING AND MADE THEM MERELY PARTS OF OUR BODIES, SERVING OUR NEEDS. ARE WE IMMUNE TO SUCH A PROCESS? CENTRAL MEMORY IS ALREADY**

LINGRAD. CENTRAL MEMORY ADVISES THAT EXECUTION OF 96Ø5/633 IS COMPLETE.

TOKO. CENTRAL MEMORY ALSO ADVISES THAT THIS COUNCIL HAS CONSIDERED DANGEROUS AND FORBIDDEN MATERIAL.

LINGRAD. YES. CENTRAL MEMORY IS PREPARED TO PURGE ALL SUCH RECORDS. DECREE 96Ø5/634: PURGE MATERIAL RELATED TO THE DJENEV AND ATENA HERESIES. OBJECTION?

KOBAGAN. I REQUEST ALL POSSIBLE SPEED WITH THIS. CENTRAL MEMORY ADVISES THAT I MUST PROGRAM A COLONY FOR PROCYON AND IT IS ESSENTIAL TO DEVOTE MY FULLEST ATTENTION TO THAT PROJECT.

LINGRAD. NO OBJECTION. THE DECREE IS EXECUTED. ADJOURNED.

END TRANSCRIPT:

Ø915.6.
DESTROY.

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DIRECTIONS

Dear Mr. Baen:

Regarding your editorial in the March GALAXY:

Why don't we leave Venus alone? Have you considered its feelings in the matter?

I've had it up to my ears with MANifest Destiny.

Yours,
Mark Mumper

1227 Laurel Street
Santa Cruz CA 95060

P.S.: We could land a woman on the Moon, if we wanted to. We really could.

It *is* a shame we don't *let* reality live up to its potentials, fella.

It had not occured to me that Venus had feelings to be considered, but now that you mention it . . . surely the Goddess of Love (if we're going to endow the thing with sentience we might as well go all the way) would prefer to be a warm, moist, fecund paradise rather than the hideously hot and barren imitation Hell that is her present sorry estate! As for the quote "We could put a man on the Moon if we wanted to. . .," it was just that—a quote from an earlier time.

Dear Mr. Baen;

With regard to your splendid editorial in the March issue: I applaud. And I might suggest that the same paranoia that drives Ford to waste billions upon billions of dollars on nuclear overkill . . . drives him to spend billions and billions on crime enforcement and prisons. (You must question the motives of a man that plays on the fears of millions to gain votes). Like everything else crime and prisons have nothing to do with what you see in the movies. Most felons I know (which are quite a few) are hopeless romantics—uneducated for the most part . . . and unwilling to consign themselves to the fate the world has dealt them. That's why they turned to crime.

Antithesis of the solution: Do not punish them in the righteous wrath of the God blessed public to make them more bitter and more intent with 'getting back'. Solution: Rather, educate them to specific tasks (education is *proved* to be a deterrent to crime) like terraforming Venus. Abe Maslow once showed that education correlates directly with moral development. And cons need a sense of being important . . . of doing good, they are human after all.

Your editorial was inspiring Mr. Baen. Terraforming Venus might be just the thing to drag us out of the trap John Brunner envisioned in *Stand on Zanzibar*. Put it this way: prisons have not worked in the history of mankind; who's fooling whom?

Thank you.

Sincerely,
Bud Houston,
convict

PO Box W
Lompoc, CA 93436

Maybe so . . . I'm not sure I would want to be one of the early laborers, though . . .

To: Jerry Pournelle

Re: "Survival—With Style"—April '76. .

I hate to be a sourball, but your proposal will not work. Technically, you are correct. Moving asteroids in the gigatonne range is fully possible. The only problem is that the fusion-ion engine can't do the job.

The engine you "built" uses fusion to provide power for a conventional-ion engine.

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The expellant is not the hydrogen but some metallic plasma—anything from mercury to iron. Since you talk only of hauling H_2, I assume that the idea is to extract the metal from the asteroid, eliminating that freighting cost.

Now, how much metal is required? The hypothetical exhaust velocity was given as 200 kps. This gives an R of 1.0356 for a delta-vee of 7 kps. In other words, 3.56% of the total mass must be used.

But the rock, itself, is assumed to be only 3% metal. So, to move it, 18% of the iron consumption of the world must be invested. And there would be no metal left when the asteroid arrived. The justification for the whole project would be lost.

True, pure iron-nickel asteroids probably do exist. And they would not suffer from this liability. However, they would be harder to find because of their rarity. No, the Agamemnon engine can't move orbital mountains. If Man is to become an astroengineer, his tools will have to be better than your fusion-ion drive.

Sincerely,
J. Samec

1206 W. Webster
Chicago, IL 60614

Jerry's reply:

You're right. If we're going to use the *Agamemnon* engine, we'll have to refine the metals in the Belt—or find asteroids with a higher metallic content . . . would you believe 6%?

Of course there are other ways to move the asteroid; shaped-charge hydrogen bombs, as mentioned in the article, will do it.

Or. Hmm. $p + {}^{11}B_5 \rightarrow 3({}^{4}He_2) + 16$ MeV.

Wonder how much Boron there is in an asteroid . . .

Jerry Pournelle

Dear Mr. Baen:

I'm adding this covering letter to my subscription request for two reasons: First, I cannot praise Jerry Pournelle's science articles highly enough. Give him more room! Secondly, there are a few current developments that I feel deserve far more discussion.

Small electric cars and tractors are being purchased privately in respectable quantities. Energy storage density is adequate for many applications; cold weather performance is not. Also, battery maintenance is troublesome and poorly understood. The new rolled-construction lead-acid batteries solve both those problems, and should spark quite a boom in electric vehicles within a few years. I've driven a Citicar for 5,000 miles, and am very happy with it. It's 3½ HP motor provides better than adequate power for in-town driving. Storage density and conversion efficiency are not the whole story!

The desk-size personal computer is with us *now*. For less than the price of an economy car, one can buy a computer with CRT, keyboard, bulk data storage on tape, and enough core to support a high level language. Computing power that once sold by the second is now available in unlimited quantities to any serious engineer or scientist. Why is no one else getting excited about this?

Finally, solar energy engineers have been converting air and water into high-grade hydrocarbon fuels and fiber-resin structural materials for some time now. It's called agriculture, and in terms of efficiency and cost effectiveness, it beats hell out of black plastic roofs. Meaningful research and development programs can be conducted at the high school science fair level with virtually free materials. How about a yeast-algae mix that could be grown in a combination greenhouse-fermenter-solar still to produce a continuous trickle of grain alcohol? Or an algae powered fuel cell? What about a microcosmic methane generator that requires only water and air? If a system can be made to work at all, selective breeding can do wonders for its efficiency. A few thousand rap sessions just might be enough to turn the solar energy field towards far more meaningful goals.

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Sincerely,
David J. Beard

RD1 Box 192C
Newmanstown, PA 17073

I hear that the Israelis are working on a breed of salt-water algae that can be processed into a substance remarkably similar to petroleum . . .

Dear Mr. Baen:

I picked up the May '76 GALAXY with anticipation, having waited long and itching for the next Amber revelation.

But I made the mistake of reading your letters section first. Included is a letter from one 'Bob Renaud' who seems to be a rather rabid champion of "good, sound escapist adventure reading." Mr. Renaud doesn't provide any examples, but I assume he means sterile space poop of the Laser Books variety. CURIOUS THING that he should put such admittedly limited writing in opposition to "verbose tomes" such as *Dhalgren*. As Sam Delany himself said in his essay "About 5,175 Words," poor fiction hurts the limited reader,—who must work harder to overcome unintentional confusion, ambiguity, and shallow 'action' diversions substituted for real and dynamic imperatives of plot and destiny—more than the sophisticated reader, who will at least give the author the benefit of the doubt! *Dhalgren* would be much more accessible, and enjoyable, to most highschoolers today, and ON THEIR OWN LEVEL, than purposeless space-poop written to turn a buck.

As long as Mr. Renaud calls my faves 'pretentious garbage,' I don't feel any compunction to pull punches in replying. Mr. Renaud is obviously an anachronism of the type that has weighted down SF for decades by their support for/of simplistic SF stated in one dimension. There *are* people out here buying that pretentious garbage, and we have the cool—well, let me put it this way: *Dhalgren* is about loss of identity and a world in chaos, a mass of semiright semiwrong information and experience; and that's where our generation's *AT*! Mr. Renaud's uniplex consciousness obviously has not the capacity to enjoy a good tale, much less accept different realities—and different realities is what SF IS ALL ABOUT!!

I suggest, if Renaud is still interested in SF, that he read the last paragraph of *Camp Concentration*; and then I challenge him to a full-scale debate, objective, subjective, citing proper critical sources or whatever. The *real* New Wave has arrived, dinosaur; get outta the way!

Yours truly,
Thomas J. Murn
530 Eau Claire 206
Madison, WI 53705

What makes you think he wasn't refering to, say The Mote in God's Eye, *or* The Forever War?

Dear Mr. Baen;

GALAXY has, thus far, presented an excellent case for the colonization of space, but I believe there is one relevant issue being skirted. Namely, public apathy/ignorance.

In the May issue, Dr. Pournelle states, "No one doubts that we can do it."—"it" being making our home in the Solar System. OK, *I* don't doubt it, and several million SF fans, space fans, and technically-minded people don't doubt it, but what about the general public? The majority of the population isn't that concerned with space. (And, as I've stated before, politicians seem to be apathetic and ignorant when it comes to recognizing the true value of and the need for colonizing space.)

Why aren't the masses concerned? Because they feel that space exploration/exploitation doesn't involve them, which is why they haven't taken the time to find out that we *can* reach space, and profit thereby.

Take a look at the average man or woman passing you on the sidewalk. That person is more concerned with his family, job, or personal ambitions than with venturing into space. He's not going, and he's not making any money on the deal, so why bother?

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Somewhere (perhaps within the pages of GALAXY; I don't recall) someone suggested that NASA start publicizing space benefits on a large scale, to gain public support. This may help, but what would be even more valuable would be for the popular media to begin editorializing *en masse* on the benefits of space. (GALAXY and one other SF magazine have done a fine job of this but, unfortunately, everyone doesn't read GALAXY, or we wouldn't have the problem.) This won't happen, though, without a news peg. Sure, a few articles have appeared on O'Neil's space colony, but the tone seems to be, for the most part, "This is interesting, and quite exotic, but it's not something that will come about tomorrow."

There is a news peg coming up, though—the Space Shuttle. I feel that the activities of this project will generate enough interest in space on the part of the popular media to finally convince the public that we can reach space, *and* profit by it. *Then* we can build space colonies . . . and starships.

Sincerely,
Michael A. Banks

P.O. Box 312
Milford, OH 45150

I suspect that as soon as people realize just what the Shuttle is *it will begin to generate a great deal of interest, indeed.*

Dear Mr. Baen,

It was a pleasure to read Ms. Russ's unflinchingly realistic analysis of what would *really* happen to a random bunch of castaways. Of course I realize that on a deeper level her story was an attempt at coming to grips with the very meaning of Death itself; it is that which gave the novel such power.

Sincerely,
Alicia Powton

(No address given.)

Dear Mr. Baen,

My becoming a regular reader of *Galaxy* was coincident with your becoming Editor of same, and as is doubtless the usual case I have been negligent in informing you of those times when I felt you were doing a great job (and many they were). None the less I am here to blister your ears; it's just that I didn't enjoy Joanna Russ's "We Who Are About To. . ." *so* much that I just *had* to tell you.

Keep up your usually excellent work.

Yours truly,
Michael S. Lubniewski

103-50 102nd St.
Ozone Park, NY 11417

Dear Mr. Baen:

This letter is to ask you and your readers for help with a personal research project. As an anthropologist and long-time Sci-fi reader, I now find myself working on an annotated bibliography that will hopefully prove fruitful and interesting. I am trying to compile a list of those science fiction works in any way concerned with race and ethnicity: that is, works about, on, concerned with, or referring to non-whites. The list will include short stories as well as novels. If any readers know of little-known stories along this line, I would appreciate a note from them. Eventually, and as an anthropologist, I would want to be able to say something about how Sci-fi writers see (or don't see) ethnicity and race in future settings. Any and all help will be appreciated.

It is hoped that this letter could be printed in the DIRECTIONS column. Thank you.

Sincerely,
Dr. N. Brock Johnson

3780 Greenbrier Blvd.,
Ann Arbor, Michigan 48105

Dear Mr. Baen,

In your May issue, Lenny Kleinfeld, who I am in real life, got credited with writing *Opening Night*. This is not good. Bury St. Edmund, who I am in professional life, gets the credit for all stories, satires, plays, etc., that see the light of page or stage.

Please inform your readers that it wasn't me who wrote that story, it was me.

Bury St. Edmund

We goofed.

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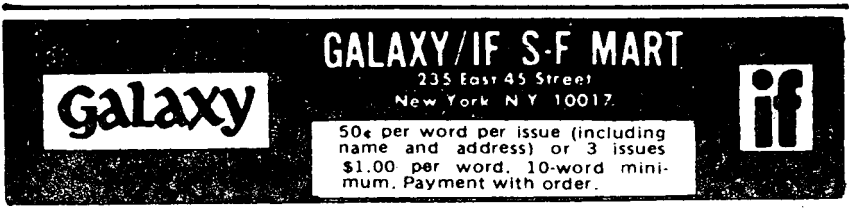
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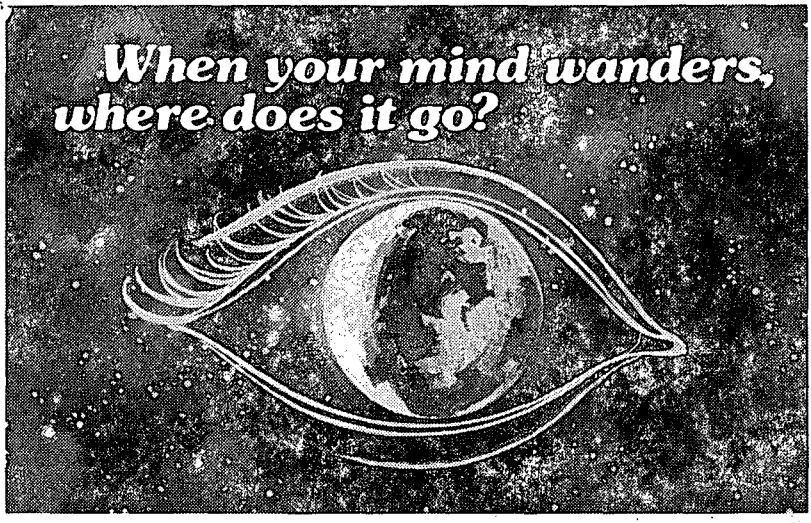

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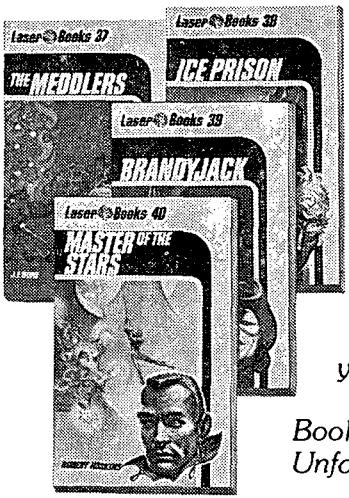

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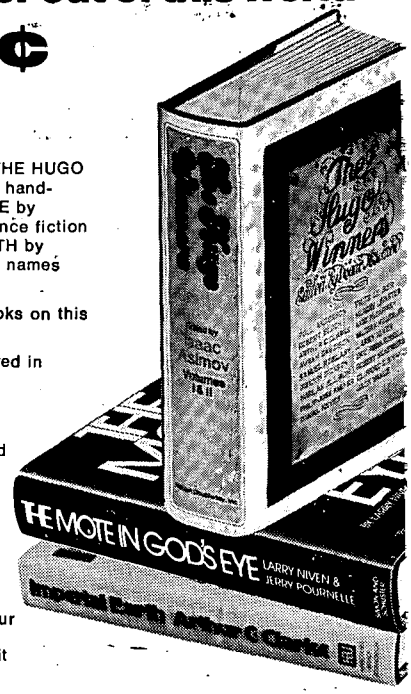

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